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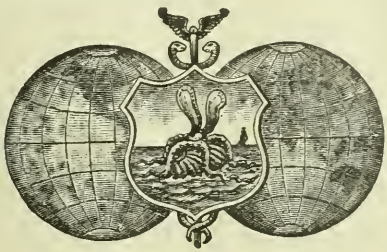

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CHARLES E. SAJOUS, M.D.,

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Selections from Society Proceedings.

AUSTRIA.

VIENNA SOCIETY OF PHYSICIANS.

A Case of Erythromelalgia.—H. WEISS presented a case of this disease at the meeting of the above-named society. In 1893 he had presented a similar case in a young girl. Together with a profuse sweat there was swelling and paroxysmal redness of the terminal portions of the lower extremities associated with severe neuralgic pain. The patient, a chamber-maid, 20 years old, entered Benedikt's clinic to obtain relief for the following symptoms: For nine months she had had, every three weeks, excessive hyperidrosis of the soles of the feet, with intense redness and slight swelling, and the toes turned partially backward,—that is to say, upon the upper part of the foot. In the morning the patient was unable to stand up during two or three hours, on account of the severe burning sensation experienced, the pain felt in the reddened portion being greater in proportion to the pressure exerted. A few whitish, macerated spots were visible upon the soles. The patient did not present any special nervous condition nor any hysterical stigmata. The menses were profuse, and the patient looked anæmic. The perspiration gave an acid reaction.

The disease was first described by Weir Mitchell (1872 and 1878), then by Lannois (1880), Seligmüller, Senator, Henoch, Gerhard, Landgraaf, Koch, Lewin, and Eubenburg, and the special disturbances of sensibility associated with trophic, secretory, and vasomotor troubles were referred to a functional affection of the spinal cord. The development of the sensory, secretory, and vasomotor disturbances had its origin in lesions situated in the posterior horns (Clarke's columns and the solitary cells of the posterior

horns), particularly in the lateral horns of the spinal cord (intermediolateral cellular tract). Kaposi considers erythromelalgia as merely a diminution of the energy of the vascular innervation, which is especially manifested in the peripheral portions of the body during childhood, up to the age of puberty, and in an intermittent manner in adults. In this condition there is always a passive hyperæmia and hyperidrosis, as in chlorotic subjects or where nutrition is impaired. From this point of view the denomination does not furnish any precise indication. Benedikt likewise designates this affection as painful perspiration of the feet, aud it cannot readily be confounded with syringomyelia and Raynaud's disease. Weiss stated that these cases were treated in Benedikt's service by ice-bladders applied over the lumbar region, with excellent results.

FRANCE.

Société de Chirurgie.

Pathogenesis of Appendicitis.—Bazy referred to the fact that, during the discussion which took place last year concerning the treatment of appendicitis, he had tried to claim an identity for typhlitis. He had insisted upon the place to be reserved for lesions of the cæcum in peritoneal accidents of the right iliac fossa, in contradistinction to the cases in which there are genuine lesions of the appendix, citing, in this connection, a case in which, upon opening a large abscess, he had found fæcal concretions which were evidently not attributable to the appendix.

Pathological anatomy demonstrated clearly enough that the cæcum, like the appendix, may perfectly well give rise to symptoms absolutely similar to those now described under the head of appendicitis. The speaker recalled a case in which the patient had presented all the classical symptoms of appendicitis, and in which he found, independent of a lesion of the vermiform appendix, a perforation of the cæcum which amply explained all the symptoms observed. Moreover, many patients recover permanently after the simple opening of an abscess, without the removal of the appendix, and, in the opinion of the author, we are not justified in concluding that the latter, any more than the cæcum, is the original source of the trouble.

Tuffier stated that he had operated upon fifty-four cases of appendicitis, and that most frequently the appendix was permeable. He is convinced, in accordance with Brun and Jalaguier, that inflammation of the appendix is merely a localization of an enteritis, due to the fact that the shape and structure of this organ form conditions especially favorable to its perforation. Like all the mucomembranous canals, the cæcal appendix is infected through the mucous membrane, and afterward the subjacent layers become inflamed, when there results an interstitial parenchymatous appendicitis. This finally causes a more or less pronounced retraction of the walls, coinciding with corresponding changes in the mucous membrane, to which is due the consequent narrowing and sometimes even complete obliteration of

the appendix. Under these conditions we may observe all the symptoms common to obliteration of the excretory canals in general (whether the Fallopian tubes, the ureter, or the ductus choledochus canal), and which manifest themselves whenever there is retention of the products of secretion or of foreign bodies.

Tuffier is of opinion, therefore, that it is important to distinguish between cases of appendicitis *without retention* and those in which there is *complete or incomplete retention.*

The only anatomo-pathological peculiarity proper to appendicitis is the frequency of gangrene, of the cause of which we are yet comparatively unacquainted. According to the cases which the author has observed, it would appear that ulceration is especially frequent when there is a large, stercoral nucleus in the retracted appendix. He wished to call attention to one side of the question which has been neglected,—namely, that intestinal obstruction consecutive to appendicitis does not appear to have come greatly under consideration. He believes that certain symptoms which are attributed to relapsing appendicitis are merely due to intestinal obstruction in connection with peritoneal lesions of appendicular origin.

He has seen two very clear examples of such cases, one of which was especially remarkable through the fact that it had been under observation for three years before the operation was performed. The subject was a child, 11 years old, who was taken with acute appendicitis, without any very violent peritoneal reaction and without apparent symptoms of abscess, in September, 1893. After three months of rest in bed, and a milk diet, during which there were alternations of amelioration and aggravation, a mass the size of a cherry could still be felt, situated exactly at McBurney's point. The following spring the little patient had another attack, which necessitated a two months' stay in bed. In October, 1895, there was a third attack, with fever, vomiting, and the opening of an abscess in the cæcum. From this time on the child appeared to be cured, and in January, 1896, no nodular trace could be felt in the iliac fossa. On April 27th there was a sudden and absolute constipation without emission of gas; there was likewise considerable tympanites and vomiting, first alimentary, then bilious. The speaker attributed these symptoms to intestinal occlusion due to some cæcal obstacle, and administered a purgative. The next day the medicine gave rise to numerous evacuations, and the tympanites diminished. Four days later symptoms of obstruction again appeared, which also yielded to a purgative. On May 7, 1896, the speaker operated upon the child with Terrier. Having made the classical iliac incision, detachment of the peritoneum and a pericæcal exploration revealed nothing, so the peritoneal serosa was cut and the ascending colon and the cæcum easily found. The surface of the cæcum and the termination of the small intestine were united by adhesions. These were destroyed and the operator endeavored to find the appendix in the usual way,—that is to say, by following the anterior band of the cæcum. Exploration of the two faces of the organ, throughout its entire circumference, as well as of the ileo-cæcal valve, was in vain. It was impossible to find a cord or band of any kind recalling the presence of the

appendix, which, presumably, had been absolutely gangrened and eliminated at the time of the opening of the abscess into the cæcum. Since six months the child has not had the slightest intestinal symptom, and his general health is perfect.

The second case was that of an adult who, after repeated attacks of apparent appendicitis in the space of eighteen months, presented himself at Tuffier's clinic with symptoms of slight and temporary obstruction of the intestines. He considered the case one of relapsing appendicitis, but on operating found only a small, fungous cavity in the region of the appendix. Epiploic adhesions existed, however, which included the greatly-distended cæcum and certainly played an important part in producing the attacks. Since the operation, performed on May 11th, the patient has never presented any intestinal symptoms.

Quénu was of the opinion that, as far as the pathogenesis of appendicitis is concerned, it is important to distinguish between that of the first attack and that of the successive ones. He is entirely of the opinion of Brun and Jalaguier with regard to the pathogenesis of the first attack, but considers that, with regard to the secondary ones, a series of actually dissimilar conditions have been confounded under the name of "attacks of appendicitis." He had recently observed a patient who, after having had genuine attacks of appendicitis, with exudations giving rise to a sensation of diffuse infiltration in the right iliac fossa, had attacks afterward lasting only several hours, which could scarcely be considered as attacks of appendicitis. The speaker recalled the fact that he had, three years before, cited a case in which he had operated upon a little patient without finding the slightest traces of appendicitis, as in the two cases just reported by Tuffier. Several weeks ago he had again observed a similar case in which he was unable to find the appendix, which he had thought he had felt upon palpation, but which proved to be merely a little chain of ganglia.

Réclus stated that he had long ago advocated a general theory which he called the "theory of stagnation." It is a well-known fact that when the liquids of the organism stagnate they have a manifest tendency to ferment. Now, the cæcum being a diverticulum of the intestine, and the appendix itself being a diverticulum grafted upon the cæcum, its contents are particularly liable to stagnation, and in this way it presents about the same conditions as those found in a blind internal fistula.

Etiologically considered, appendicitis may be the result of several diseases, and may consequently be divided into three main categories. To the first belong the cases of appendicitis due to a purely local cause, such as the presence of a foreign body in the appendix, which, under the conditions presented by the organ affected, present no tendency toward recovery. In the second group may be classed such cases as are due to a neighboring inflammation, which, instead of subsiding, as in the remaining portions of the intestines, persists in the region of the appendix, owing to the stagnation of the liquids in its cavity. In this connection Réclus related the case of a brother-physician, who, after an attack of entero-colitis, remained without further symptoms during about two years, and

then had an attack of appendicitis which necessitated surgical intervention. The appendix was found gangrenous and entirely separated from the cæcum.

Finally, in a third category of cases, which have been but little studied, may be included certain varieties of appendicitis consecutive upon a condition of general disease, such as typhoid fever.—*La Semaine Médicale*, December 16, 1896.

UNITED STATES.

New York County Medical Association.

Appendicitis Complicating Pregnancy.—Robert Abrahams remarked that, if appendicitis in general merited so much attention as had been given it the past few years, how much more in pregnancy, when two lives instead of one were in jeopardy! Yet up to a short time ago appendicitis in pregnancy was unknown in medical literature, if a brief report of one case were excepted. It was not quite two years since Dr. Mundé's celebrated case was put on record, but now physicians everywhere realized the possibility of its occurrence, and were on the lookout to diagnose it. Up to the present, eleven cases had been placed on record, ten of them suppurative, one catarrhal. The author in this paper added four new ones, and their interest lay in the fact that the mothers, as well as the children, escaped an untimely death. The first case was one of catarrhal appendicitis, seen with another physician in the city, October 1, 1895. The symptoms related to pain at McBurney's point, tumor, increased pulse, and elevation of temperature. These symptoms gradually disappeared, but on October 20th labor set in and a child was born at seven and one-half months. It lived six days. The mother fully recovered and had no pain after delivery. The second case was in a woman seven months pregnant. There were the constitutional symptoms referable to the pulse and temperature, and locally pain, but no tumefaction. The diagnosis made was catarrhal appendicitis. This patient was much constipated. The symptoms subsided after nine days, under cathartics, etc. She was delivered of a healthy child at term. He had treated her in two attacks of recurrent appendicitis since, but she refused operation. In the third case the patient was also habitually constipated; the temperature, pulse, localized pain, vomiting, and later some tumefaction established the diagnosis, and the patient was sent to the hospital, where the diagnosis was concurred in and the operation was about to be performed, but improvement began and she recovered without operation. He had not seen this patient since. The fourth case was one of traumatic appendicitis, which was also seen by Dr. Mundé, who concurred in the diagnosis, but suggested waiting for a time. The patient markedly improved, but still had some pain in the region of the appendix. She was in the ninth month of pregnancy.

The pathology and etiology were, for the most part, the same as in women not pregnant, but the enlargement of the uterus would affect

adhesions; and in all of his cases but one there was a history of obstinate constipation, which he thought might have been a cause, and pointed to the necessity for attention to the bowels during the pregnant state. As to diagnosis, the presence of the enlarged uterus would interfere somewhat with palpation and percussion, but with care local signs could be recognized if present. In all obscure cases anæsthesia should be employed. The chief disease in differential diagnosis was tubal pregnancy, but here the duration of the tumor before rupture was only four months, and it need hardly be thought of after that period. As to hæmatocele, in only one of the cases on record had a tumor of doughy feel at the vault of the vagina proven to be a case of appendicitis. Inflammation of the pelvic organs, ovaritis and salpingitis, was almost always infectious in origin; so that the history would be found of value in diagnosis. Floating kidney and renal calculus might occasionally be mistaken for appendicitis, but patience and care would clear up the error. Typhoid fever offered some difficulties in diagnosis.

As to prognosis, in reported suppurative cases there had been seven deaths out of ten, or a mortality of 70 per cent. In all of the cases of catarrhal appendicitis the patients had recovered. Of subjects operated upon, only one child had lived; the others had perished before or after the operation. Of the total number of reported cases of pregnancy complicating appendicitis—sixteen—eight resulted in recovery and eight in death.

All cases, unless running a very mild course, should be operated upon early. He gave the following rules, partly his own and partly from Willy Meyer: 1. Operate early, within twelve hours, in acute perforative appendicitis. 2. Take the pulse as a guide, 106 to 120 being an indication for operation. Dr Abrahams added to this rule that the pulse should not only be rapid, but should be out of proportion to the temperature. 3. In cases of doubt operation is better than waiting. 4. Sudden lull of the symptoms and within ten or twelve hours sudden recurrence. 5. In cases of old appendicitis lit up during pregnancy, operation ought to be done, even if the attack is a mild one, especially if it occur early in pregnancy. Laparotomy is then easy and removes the possibility of future attacks, when operation may not be easy.

Paul F. Mundé referred to his case which had been mentioned in the paper, and said that when it was published it became the subject of general attention, as if it had never occurred to anybody that a woman who was pregnant could have appendicitis. But, after his attention had been called to the subject by this case, he could see no reason why a woman who was pregnant might not have appendicitis as well as anybody else. Since then he had seen several cases, and had published a very instructive one in the *New York Medical Record*. He would not hesitate to operate, no mattter what the period of pregnancy, and would expect to get as good results as in non-pregnant women.

Robert T. Morris thought appendicitis had, in all probability, occurred frequently in pregnant women, but had been overlooked on account of there being other diseases which simulated it. We could fairly expect it to occur rather more frequently during pregnancy for two reasons: 1. In

pregnant women the appendix hung over the pelvic brim in about 35 per cent. of the cases, and in this position was liable to become bruised by the enlarging uterus. 2. In many cases adhesions existed, and as the uterus enlarged and rose out of the pelvis they were likely to be broken up and excite appendicitis. He thought he had had four or five cases of appendicitis in which pregnancy had played a rôle, but had not published them separately from his other cases. Regarding catarrhal appendicitis, he had not seen it in any case operated upon, yet he did not doubt that catarrh of the intestine might extend to the appendix. When symptoms arose peculiar to appendicitis, infection and exudation had taken place, which put the case out of the category of catarrhal appendicitis. Regarding diagnosis, he supposed there was some difficulty in distinguishing in some cases between typhoid and appendicitis. At least, he had seen a few cases with eminent physicians in which there was a difference of opinion, and, inasmuch as an operation was not performed, the diagnosis was not settled. Resisting tonic spasm of the abdominal wall served to distinguish acute appendicitis from typhoid and salpingitis. It was very seldom that surgeons made a mistake and operated for appendicitis when it did not exist. Dr. Morris said doubt was disappearing among the experienced with regard to ability to palpate the normal appendix.

Tubal Pregnancy Mistaken for Appendicitis.—William T. Lusk related a case which showed that even experienced surgeons, as well as gynæcologists, sometimes made a mistake in diagnosticating appendicitis. The patient was a girl of 19 years, of excellent character, exceptional family, who had an attack of pain in the right side and other symptoms of appendicitis. The symptoms subsided, and she had another attack, in which he was called to examine the pelvic organs. The pain was in the right side. He found the tumor behind the uterus on the right. A surgeon of distinction saw the patient and diagnosticated appendicitis, and recommended operation. All who examined her thought they felt the thickened appendix. On operation Dr. Lusk found in this young girl of exceptional character, who had given no history of passing by a menstrual period, tubal pregnancy. In this instance, the clearness with which his experienced friends had felt the supposed diseased appendix through the abdominal walls was certainly very delightful!

H. J. Garrigues had operated upon one case of appendicitis complicating pregnancy, and while he thought before the operation that the mass might be the diseased appendix, yet there was no reason to suppose that it might not be a neoplasm. The operation decided the diagnosis. The patient did well, but subsequently developed pleurisy, which led to exhaustion.

The Appendix Better Nourished in Females.—Willy Meyer had operated in about two hundred cases of appendicitis, and in only one did the disease complicate pregnancy. He had seen one of Dr. Mundé's cases also. It seemed to be a clinical fact that appendicitis occurred more frequently in males than in females, and in trying to account for it he was disposed to think it might be due to better nutrition of the organ in females, and in

them this was at its height during pregnancy. The case seen by him was a patient of Dr. S. Marx. She had had her first attack of appendicitis about the eighth month of pregnancy. It subsided under expectant treatment. A week later she had pain again and gave birth to a child. A few hours after delivery she had a chill, high temperature, and symptoms of acute appendicitis. She was again treated on the expectant plan, recovered, and Dr. Meyer saw her afterward, with Dr. Marx, in a third attack, and they operated. An unusual condition was found. The appendix was situated in a sheath of new tissue, and when withdrawn was found to measure eight and one-half inches in length. Dr. Meyer had seen so many cases of recurrent appendicitis that he had come to the positive conclusion that all persons should be operated upon who had had one well-defined attack. The conscientious physician should turn them over to the surgeon at a time when ideal surgery could be done, guaranteeing the patient against future attacks of appendicitis and also against hernia in the operation wound.

Another Mistake in Diagnosis.—Howard Lilienthal agreed with what seemed to be the consensus of opinion,—to operate in time in all cases of severe appendicitis. He then mentioned a case of what appeared clearly to be appendicitis complicating pregnancy, although the possibility of typhoid fever was not excluded. He saw the case with Dr. Vineberg, who had already made up his mind to operate, but at the request of the family called Dr. Lilienthal in consultation. They operated and found an absolutely normal appendix, and nothing to account for the patient's symptoms. The patient growing steadily worse, Dr. Vineberg emptied the uterus. The collapse became more profound, and nobody supposed she would live, but there was a sudden turn for the better and she recovered. Regarding the diagnosis between appendicitis and typhoid fever, it should be remembered that the appendix might become perforated in the latter disease. He had seen two such cases.

Catarrhal Appendicitis.—Bernard S. Talmey said, with regard to one not seeing the appendix in a state of catarrhal inflammation, the reason was clear: one did not operate in such cases. To deny the possibility of its occurrence was as reasonable as to deny the existence of catarrhal nephritis or catarrhal inflammation of the lungs, because not found in cases operated upon. Perhaps in not more than 10 per cent. of all cases of appendicitis was it necessary for the physician to call in the surgeon; the other 90 per cent. got well. Now, since but few of the other forms of appendicitis recovered without operation, it was fair to infer that the 90 per cent. were catarrhal.

Constipation and Appendicitis.—Henry Illoway referred to the fact that in most cases of operative appendicitis fæcal concretion had been found, and to the further fact that in many instances, especially in pregnant women, there was a history of constipation. He thought the constipation might be an important factor in lighting up an attack of acute appendicitis by the pressure exerted through the hard masses upon the fæcal concretion, which really was a foreign body within the appendix. In this way the fact

was accounted for that appendicitis was set up from within the organ and not from without, the pressure simply being the means of opening the way to infection from within.

MEDICAL AND CHIRURGICAL FACULTY OF MARYLAND.

The Early Symptoms of General Paresis.—GEORGE H. ROHÉ argued that we should look for the early symptoms, although the results of treatment are not encouraging. The diagnosis must be made from a collection of symptoms partly physical and partly psychical. The disease generally begins after the thirty-fifth year, and rarely after the fiftieth. Those in the higher walks of life are attacked by preference, and men more than women. Clergymen are almost exempt and actors are most frequently affected. Syphilis may be one of the causes. The symptoms are various and the treatment is unsatisfactory, and rarely does more than prolong life a few years. The iodides may be given.

EDWARD N. BUSH thought that the early symptoms of paresis occurred in the following order: (1) vasomotor, (2) motor, and (3) psychical. Sometimes depressing ideas usher in the disease.

Diffuse Scleroderma.—WILLIAM OSLER presented a case of diffuse scleroderma. The patient was a white man, about 30 years old, who had suffered from a hardening, thickening, and gradual immobility of the skin. There had been inflammation, erosion, and finally disability. This trouble was most marked in the hands and arms and face, although the skin of the whole body was somewhat hide-bound, and the patient could not close his hands tightly. There were two forms of this disease,—the diffuse form and the local form. The case presented belonged to the diffuse variety. The etiology of the disease is not known and the pathology very obscure. Thyroid extract is sometimes efficacious in this disease. In this case the man had been much improved by it, and there were chances that it would stop the progress of the disease, if not cure it. He could not elevate his shoulders. Scleroderma was a slow, progressive, and a very rare disease. The speaker had been in practice twenty years before he had observed a case, and had seen only six cases altogether.

The Pathology and Bacteriology of Typhoid Fever.—SIMON FLEXNER stated that, while we have every reason to believe that the disease comes from the germ—the bacillus—in the anatomical tract, there is no ground for believing that it gets into the body in any other way than through the intestines. This fact is based not only on the pathological anatomy, but on experiments as well; we cannot produce the disease in animals. Not all parts of the intestines are alike prone to infection to the same extent. Infection takes place where the lymphatic follicles are in aggregation, but not all the lymphatic aggregations are affected to the same extent. There is a general distribution of these lymphatic follicles throughout the whole tract of the intestines, but not all are affected in typhoid fever. The agminated glands are more susceptible to the poison than the solitary ones, and

those nearer the lower part of the small intestine are especially affected. Here the infectious material of typhoid fever is kept a long time, owing to the anatomical character of the parts. The ulceration produced by the bacilli may be very superficial, affecting only the mucous membrane, or the whole thickness of the intestinal coats may be affected, causing perforation.

Many epidemics are from an infected water-supply. The organism of this disease is not particular as to where it lives, and can thrive in water a long time, as well as in milk. It is difficult to discover and separate it from other organisms. The growth is often invisible and causes no change in the color or taste of the milk infected, nor does it cause coagulation. This fact helps in its recognition, because the organisms with which it is confused grow visibly, and recent methods allow the typhoid germ to be discovered in the intestines. By the use of the differentiation method of Elsner, in culture-media of varying acidities, the growth of the typhoid organism in plate culture may easily be separated.

The method of Pfeiffer and Widal, by which the disease is diagnosticated in its early stages, is very ingenious. A bouillon culture of typhoid germs is mixed with blood from a suspected case of typhoid. If the disease really exist, the effect of the serum from the typhoid case causes a loss of motility, a clinging together, and, finally, a disintegration of the organisms. Wyatt Johnston has been able to make a diagnosis of typhoid fever in many cases in a short time by means of a hanging drop of a pure culture of the typhoid organisms to which serum from a typhoid patient has been added. This is a great advance in our diagnostic methods, and should be made use of by all physicians. (See "Clinical Notes," etc., on page 22.)

William Osler, alluding to the prevalence of typhoid fever in the State of Maryland and in Baltimore, said this prevalence was an index of the sanitary intelligence of the community and of the physicians, and that, with the help of the public and of the politicians, it could be stamped out within three years.

John S. Fulton, the Secretary of the State Board of Health, said that, within his one month of service as Secretary of the State Board of Health, he had observed that, while the country-bred bacillus enjoyed great prevalence in the city, the city-bred bacillus seemed to be especially prevalent in the country. As a preliminary step to obtain statistics, he had written to fifty-six physicians throughout Baltimore and Maryland, and had received twenty-three replies, and to explain his opening remark he had found that the city physicians maintained that the cases in their care had originated from infection in the country, while the country physicians blamed the city infection for their cases. He said there were also many cases of typhoid fever concealed under the name of typho-malarial fever, the majority of persons apparently thinking that this combined form of the disease was less serious than either one disease alone. To show how unreliable the statistics were, he would quote from one of the hospital reports (Bellevue Hospital), which showed 16 cases of typhoid fever with a mortality of 16 and 76 cases of typho-malarial fever with no deaths.

Either the diagnosis was very bad or the therapy was murderous. He had been studying the health reports of the State of Michigan since 1886, and had noticed that, at first, many cases of typhoid and typho-malarial fever were reported, but gradually, year by year, the typho-malarial cases had been disappearing, while the malarial and the typhoid cases were slightly increasing. He said that the State Board of Health of Maryland would shortly make a complete investigation to ascertain the sanitary conditions in reference to typhoid in Maryland, and letters would be written to every physician in the State. This would be the happiest and most profitable investment Maryland ever made. If we could place with the board of experts enough money to make a substantial beginning of the reform, its members would realize the possibilities that Dr. Osler had maintained.—*Medical Record*, December 5, 1896.

New York State Medical Association.

The Technics of Intubation in Children; Some Remarks on the Time for Operation and After-treatment.—Thomas J. Hillis recommended that the child be prepared for intubation by wrapping it in strong muslin, the arms hanging by the sides and the forearms and hands crossed on the abdomen. This position, and the use of muslin instead of a blanket, secured to the operator more room for the necessary manipulations. Instead of keeping the tube and introducer vertical and in the median line during the whole process of intubation, as was usually done, space could be economized, and in some instances the operation facilitated, by tilting the introducer and tube during the first part of the introduction, so that the tube would lie transversely across the tongue. Of course, as soon as the tube touches the guiding finger, the instrument should be quickly restored to the vertical position in the median line of the body, and inserted into the larynx. Among the various methods that had been proposed for extraction of the tube there was one simple procedure which was applicable to infants under a year old, in whom the cartilaginous rings of the trachea were soft and yielding. This consisted in placing the infant on its back, with a small pillow under the neck, and the head thrown well back, and, by means of the thumb and fingers, "expressing" or forcing the tube upward and backward into the mouth, where it could be seized with the thumb and index finger of the disengaged hand. The speaker highly commended the ingenious contrivance for extraction which was invented by Dr. Dillon Brown. He said that no hard-and-fast rule could be laid down as to the number of days the tube should be allowed to remain in the larynx, but it was always well to err on the side of leaving it in a little longer than was absolutely demanded. There would be slight obstruction present for a short time after the removal of the tube, but, if this was not very great, it need cause the physician no special uneasiness. It was well known that considerably difficulty was often experienced in feeding children while the tube was in the larynx. The difficulty was commonly overcome by placing the child on the nurse's lap, on its back, with the head hanging down over

the edge of the lap. Personally, he preferred to have the little patient lie on the stomach, face down, as this gave greater command over the constrictors.

Temperature as an Element in Prognosis.—Shrady spoke of the accuracy of the temperature-record, as compared with that of the pulse and respirations. It furnished the physician with more reliable information than the other vital signs did, but the temperature-record, as an index of the problems of waste and supply, should be ever considered in the light of sex, age, temperament, and environment. A high temperature was not necessarily a signal of danger—a temperature of 106° F. on the second or third day of catarrhal pneumonia was not so grave as a temperature of 105° F. in the second or third week of typhoid fever. Da Costa had reported a recovery in a case of cerebral rheumatism after a maximum axillary temperature of 110° F. A temperature of 96.5° F., he said, was the rule in shock, apoplexy, diabetes, tuberculous peritonitis, cholera, and pulmonary embolism. In the prognosis of all these conditions there were no embarrassments, for the *finale* was not long delayed and was sure to be gloomy—the fires were low and smoldering. His conclusions were: 1. That high temperatures were not so uniformly fatal in their tendencies as low temperatures. 2. That a high temperature of short duration was simply indicative of an acute infection or of some insignificant disturbance. 3. That a subnormal temperature, as a rule, presaged death. The greatest disappointments were the rule in cases of collapse.

The Medical Treatment of Inebriety.—T. D. Crothers, of Hartford, Connecticut, entered a plea for a more careful and general study of inebriety by physicians, particularly as regarded the etiological factors entering into individual cases. He said that the removal of all spirits at the beginning of the treatment was always followed by the best results, and the reaction could be effectually neutralized by giving $\frac{1}{20}$ grain (0.003 gramme) of nitrate of strychnine every four hours, with the bromides, for the relief of insomnia. This treatment should be supplemented by a calomel purge, the use of hot baths, and vigorous massage, and by the administration, at stated intervals, of such nourishment as hot broths. Where a gradual withdrawal of spirits was insisted upon, the form of spirits should be changed to the wines and beers. It would be found that the withdrawal of liquor in these cases often resulted in the sudden and unexpected development of grave organic disease,—*e.g.*, tuberculosis and dementia. Inebriety was not infrequently the result of an unusual and prolonged strain, or was due to climatic conditions and environment; hence, when such factors are present, every effort should be made to eliminate these factors, otherwise there would be a speedy relapse. Some of the preparations were useful in averting the "drink-storm," but the administration of drugs, like apomorphine, with the idea of causing a disgust for liquor, was always dangerous and but rarely satisfactory. The key-note to the successful treatment of these cases was to be found in sharp elimination. Where the bromides were indicated, they should be given in large doses,—

from 50 to 100 grains (3.25 to 6.50 grammes); these doses should not be continued for more than a few days. No one remedy was capable of meeting a wider range of conditions than the Turkish bath associated with massage.

The Surgical Relief of Obstruction of the Common Duct by Biliary Calculi.—H. O. Marcy, of Boston, described the operation which he had been the first to do for the removal of calculus situated in the common duct. The original operation had been done on October 20, 1889, according to the following method: The walls of the common duct were divided with scissors and their edges everted from over the calculus, the abdominal cavity having been previously shut off from the field of operation by sponges. With a fully-curved needle armed with selected tendon-suture, the divided edges of the thickened mucous membrane of the duct and gall-bladder were united by a continuous suture. Over this the peritoneal edges were coaptated by a layer of continuous suture, and then a third layer of continuous sutures was applied, the sutures being taken parallel to the long axis of the wound, and through the peritoneum. Tension on this suture buried not it alone, but also the uninjured peritoneum. After the removal of the sponges, the peritoneum was closed with a continuous double tendon-suture. The divided muscular structures were united in a similar manner in separate layers, and the skin was coaptated by a layer of buried tendon-sutures. The wound was sealed with collodion. Convalescence was rapid. The calculus, when dried, weighed fifty-nine grains.

A New Microtome.—Sydney Yankauer, of New York County, exhibited a simple and very inexpensive microtome which he had devised, which had been proved capable of doing as good work as the more expensive instruments. With the rude model shown, he said, he had cut sections in celloidin a thousandth of an inch thick, and in paraffin sections only one-five-thousandth of an inch thick.

A Successful Plaster-of-Paris Bandage Cutter.—Yankauer also exhibited a new instrument for cutting plaster of Paris. It consisted of a series of peculiarly-ground knife-blades arranged around the periphery of three wheels, which were all fastened to one axle and were rotated after the manner of a circular saw. This peculiar construction permitted of a very rapid and easy cutting action, and kept the teeth free from clogging.

Physiological Deductions Regarding the Usefulness of So-Called Animal Extracts.—H. A. Haubold took the position that these substances must be so altered by digestion and other changes that there was no reason to suppose that they reached the tissues in a form which would exert any specific action. It had been alleged that when the nucleins were administered hypodermatically they gave rise to a leucocytosis, but, while this was a fact, it only seemed to show that the blood made a special effort to rid itself of this foreign body.

A Point in the Treatment of Endometritis.—William H. Robb advocated a more general use of nitrate of silver in the treatment of endometritis. His plan was to make no intra-uterine applications without rigid antiseptic precautions, and, if the drainage were not sufficient, to attend to this matter

at once. Incidentally, of course, injuries were repaired and displacements reduced. The application of the nitrate of silver should be made carefully and thoroughly, and to do this it was absolutely necessary that all unhealthy secretions should be removed previously from the interior of the uterus, and the latter be left clean and dry. For mild cases and those seen early he preferred to use a 5- or 10-grain (0.33 or 0.66 gramme) solution of nitrate of silver, but the more chronic cases required very much stronger solutions or even a light touching with the solid stick.

L. J. Brooks, of Chenango County, said that such applications were followed immediately by an apparent improvement or cure, but further observation would show that a real cure had not been effected, but that, on the contrary, the treatment had left an atrophic, non-secreting, and irritable endometrium. There was no such objection to the use of the curette.

J. Francis Calef, of Middletown, Connecticut, had found a weak solution of nitrite of silver, 1 to 3000, soothing to an inflamed mucous membrane, but to use these very dilute solutions effectively the water for washing the surface must be free from chlorides.

A Class of Fatal Cases Presumably Due to Intestinal Ptomaines.—E. D. Ferguson, of Rensselaer County, described the histories of eight cases—four medical and four surgical—in which the chief feature had been the sudden onset of symptoms,—vomiting, at first, of watery mucus containing a few dark specks, and later the vomiting of coffee-ground material, and the development of a slight icterus. Death had occurred in about forty-eight hours. The cases had not been in the same locality, and had occurred at different times, extending over a period of a number of years. In the autopsies that had been obtained there had been no evidence of intestinal obstruction, peritonitis, or sepsis, but the liver had been the seat of parenchymatous inflammation, with softening and acute atrophy. Intestinal obstruction could certainly have been excluded in some of the cases, as, for instance, the one in which there had been free movements of the bowels up to the day of death. The only explanation that he could offer was that the condition had been an acute toxæmia resulting from the accumulation of a bacterial ferment or an enzyme in the blood, or else that through some extraordinary influence of the nervous system the digestive and assimilative processes had been so interfered with that a virulent form of poisoning had been produced.

The Palliative Treatment of Cancer of the Cervix Uteri and Bladder.—Nathan G. Bozeman, of New York, advised that the strictured condition of the vagina should be remedied by the wearing, for a few hours daily, of intravaginal dilators, and that where the disease had produced a vesico-vaginal fistula irrigation should be performed. This last was best accomplished by the patient wearing the Bozeman vesical-drainage support, and using it in conjunction with his intermittent siphon apparatus, by which continuous irrigation could be kept up for three hours at a time.

The Bromides as a Cure in Diphtheria.—Robert Aberdein presented a paper on this subject in which he stated that he had been led to adopt the

treatment by an accidental observation regarding the action of the bromides in an epidemic of diphtheria that had occurred in an asylum. His experience with this treatment had comprised thirty-eight cases with only two deaths. He expressed the greatest confidence in its value.

Recent Investigations Concerning Eclampsia.—W. T. Lusk, of New York, opened the discussion of this subject by calling attention to the fact that many pregnant women had albuminuria without eclampsia, and that many others had eclampsia without any evidence of abnormity in the urine. It was now well known, he said, that many poisons resulting from excessive tissue change might give rise to convulsions, and it was well to remember that a diminution in the quantity of urea indicated an excess of the other poisons resulting from tissue metabolism. It was not improbable that eclampsia might result from intestinal decomposition and the formation of certain toxins. A plan of treatment now finding much favor in Europe consisted in keeping pregnant women who exhibited slight albuminuria, with perhaps faint nervous symptoms, on a rigid milk diet and carefully regulating the bowels. Personally, he would not care to interfere with pregnancy where the only symptom of disorder was a slight albuminuria. Where interference was demanded, he preferred to induce labor by the use of Barnes's bags, except in the rare and extremely urgent cases where it seemed justifiable to still further expedite labor by making Dührssen's incisions into the cervix. When it became necessary to resort to these incisions they should be closed again by suture immediately after delivery. Where a patient with puerperal eclampsia had turgid blood-vessels, no known remedy could equal the removal of sixteen ounces of blood from the arm. Veratrum viride was at present attracting attention in Europe, but he had had no personal experience with it in the treatment of puerperal eclampsia.

E. R. Squibb, of King's County, recommended the employment of the official fluid extract of veratrum viride, in doses of 5 minims (0.33 cubic centimetre) every ten or fifteen minutes, until the pulse had been affected by it; after this, the drug should be administered for some time longer, but in diminished doses. Norwood's tincture was of very variable strength. The pulse was sometimes apparently feeble, but even here the veratrum should not be withheld, but given in smaller doses.

The president said that he usually gave not more than 5 minims (0.33 cubic centimetre) of the veratrum, repeating the dose in half an hour. The pulse was certainly sometimes quite deceptive; even when it was apparently feeble it was proper to give veratrum and to bleed.

The Duty of the Public to the Physician.—William M. Bemus, of Chautauqua County, reviewed some legal points of general interest to the physician. He called attention to the fact that, if a physician were sued by some charity patient, even though the case were decided in his favor and the plaintiff ordered to pay the costs, the physician would find that he would have to pay his own bill, being the only responsible party. Malpractice could only be affirmed when the physician deliberately set aside well-

known principles. As a rule, anything warranted by good practice and not objected to by the patient was justified in law. The prescription had been decided to be the property of the patient, and, while the druggist had a right to retain it as a voucher, he had no legal right to renew or duplicate it without the knowledge and consent of the prescriber.

A Plea for the General Use of Measures to Prevent Ophthalmia Neonatorum.—A. A. Hubbell showed that one or two children out of every thousand born in the United States had ophthalmia neonatorum, and that about 15 per cent. of those who had had this disease and had not been properly treated became blind in both eyes. He described various methods of prophylaxis, and showed by statistics from different institutions what a remarkable reduction in the percentage of children having ophthalmia neonatorum had been effected by the systematic use of the Credé method. This consisted in giving the child a bath immediately after ligating the funis, and then, after wiping the eyelids with absorbent cotton, instilling into each eye a drop of a 10-grain (0.66 gramme) solution of nitrate of silver. As ophthalmia neonatorum developed where there had been not the slightest ground for suspecting that the mother had had gonorrhœa, the only effective method of prophylaxis presupposed the employment of the treatment in every newborn child. (See Dr. Levison's report, on the next page.)

Supplementary Notes upon Tendon-grafting and Muscle-transplantation for Deformities Following Infantile Paralysis.—S. E. Milliken, of New York, presented a paper on this subject which was supplementary to a similar communication presented a year ago. He said that he had operated in this class of cases altogether fourteen times, and in only one instance had there been a failure to get union. He preferred to use kangaroo-tendon on the tendons and muscles in the closure of the sheath, and interrupted catgut for the wounds in the skin. The limb should, of course, be perfectly immobilized by means of plaster of Paris. The best results were obtained in young children.

Auscultatory Percussion.—Louis L. Seaman, of New York County, exhibited his perfected instrument for practicing auscultatory percussion without the aid of a second person. He also showed a very superior form of stethoscope which, he said, had come into vogue in Europe. It consisted of a small, hard-rubber chamber, closed at the lower, or chest, end with a diaphragm not unlike that used in the telephone, and at the upper end by a rubber cover through which soft-rubber tubes passed up to the ears. He stated that in this form of stethoscope extraneous sounds caused but little inconvenience, and that auscultation was very satisfactory with it, even though it was applied to an irregular surface. When it was desired to localize the sounds more accurately, this could be accomplished, he had found, by screwing a hard-rubber stem into the diaphragm.—*New York Medical Journal*, December 5, 1896.

Selections from Reports of Members of the Annual's Staff of Correspondents.

Norway.

DR. F. LEVISON,

REFERENT FOR DEN DANSK LITTERATUR VEDRØRENDE: ALMINDELIG MEDICINSK PATHOLOGI OG THERAPI, DERI INDBEFATTET, NERVE- OG SINDSSYGDOMME, PÆDIATRIK, OBSTETRIK, GYNÆKOLOGI, HYGIEINE, DEMOGRAPHI, RETSMEDICIN, PATHOLOGISK, ANATOMI, BAKTERIOLOGI.

Alle medicinske Böger, Disputatser, Monographier, Tidsskrifter etc., der adkomme i Danmark bedes sendt til

DR. LEVISON,
Norrevoldgade, 13,
Köbenhavn.

Case of Spondylolisthetic Pelvis.—VEDELER describes a case of spondylolisthetic pelvis observed. The body of the fifth lumbar vertebra had descended upon the upper portion of the sacrum. The antero-posterior diameter (conjugata vera) was, nevertheless, nine centimetres, and the woman was successfully delivered of two living children.—*Norsk Magazin for Läger*, p. 833, 1896.

Treatment of Puerperal Eclampsia.—DREJER is of the opinion that the best treatment for puerperal eclampsia is to induce delivery as speedily as possible. After having considered the various methods employed to this end, he gives the preference to manual dilatation of the cervix, preceded, if necessary, by dilatation by means of Hegar's sounds. When the orifice has reached a diameter of three centimetres, the delivery may be made according to the Braxton-Hicks method. The author cites three cases of puerperal eclampsia successfully treated by this method.—*Norsk Magazin for Läger*, p. 885, 1896.

Mortality in the Various Periods of the Puerperium.—VOGT has studied puerperal mortality in Norway from 1882 to 1891, dividing this period into two equal portions. By comparing them he finds that the mortality in the second period is greater than that of the preceding one, notwithstanding the fact that puerperal antisepsis has made considerable progress during that time. He attributes the increased mortality to the more frequent use of the forceps.—*Norsk Magazin for Läger*, p. 657, 1896.

Treatment of Gonorrhœal Ophthalmia in Infants.—HJORT admits the fact that the treatment of gonorrhœal ophthalmia in the newborn by the application of a 2-per-cent. solution of nitrate of silver is very painful for the infants, and should be practiced with great care. He proposes, instead, oxygenated water, a 1- to 1½-per-cent. solution being instilled into the eyes. This solution does not cause any disagreeable sensation, and the pus is immediately coagulated, forming granular masses, which are easily expelled by movements of the eyelids or by the instillation of a weak solution of

boric acid. When the eye has been cleansed in this way, several drops of a 1 to 1000 solution of nitrate of silver may be introduced. This treatment gives excellent results, and is not painful.—*Norsk Magazin for Läger*, p. 823, 1896.

Papillomatous Ovarian Cysts.—OSCAR SEMB publishes a monograph upon papillomatous ovarian cysts, and divides the latter as follows: 1. The papilloma, properly speaking, which manifests itself as a cystopapilloma or a superficial papilloma. 2. The papillomatous colloid cystoma,—*i.e.*, a colloid cystoma presenting an exceptional epithelial proliferation. 3. The papillocarcinomatous cyst.

In one case the author found an endothelioma in the form of papillary excrescences in an ovarian cyst. He minutely describes twenty cases of papilloma observed by himself, and gives a clinical and histological history of these tumors in general. They must not be confounded with papillary cystocarcinomata, from which they may be distinguished (notwithstanding the microscopical resemblance, the peritoneal implantation, and the ascites common to both affections) by their absolutely benign character, the epithelial proliferation never invading the surrounding tissue to any extent. Papillary cysts grow slowly and do not give rise to cachexia; the implantations upon the peritoneum are also benign in nature and frequently disappear after the removal of the tumor itself. According to the author, papillomata rarely degenerate into carcinomata, but retain their benign character for years. The papillomatous cyst has its origin in the superficial epithelium of the ovary; only in one case was the author able to trace it to the epithelium of the primary follicles.

The prognosis is very good; there is no recurrence through the peduncle after the removal of the papillary cysts. An operation should always be accompanied by extirpation of the other ovary, even though the latter appears healthy, because the second ovary may later on become the seat of growths of the same kind.—*Norsk Magazin for Läger*, Supplement of October issue, 1896.

Litten's Diaphragm Symptom.—STORM-BULL has tried to find Litten's diaphragm symptom in 1300 cases, and found that it was frequently absent, even in healthy individuals; also, that it is often present on one side only. In diseases of the thorax, lungs, and pleura this symptom is not very frequently perceivable, and in the author's opinion no great advantage can be derived from it by the physician. For the physiologist, however, the method is very interesting.—*Norsk Magazin for Läger*, p. 1005, 1896.

Bacteriuria as a Cause of Enuresis.—LYDER NICOLAYSEN mentions a rarely-noticed cause of incontinence of the bladder with diurnal enuresis,—namely, bacteriuria. In eight cases of diurnal enuresis observed by the author he found the existence of bacteriuria. The urine, which was obtained with all the necessary precautions, contained the coli bacillus. In what manner the bacteriuria occasions the enuresis remains undetermined. For the treatment the author resorts to lavage of the bladder with a solution of

nitrate of silver and internal antiseptics, such as salol, but the bacteriuria resists for some time.—*Norsk Magazin for Läger*, p. 1012, 1896.

Variations in the Butyric Globules of Milk.—JOHANNESEN has made researches concerning the variations in the butyric globules of the milk of women and of cows. The diameter of these globules in the milk of women varies from 2.5 to 12.5 millimetres, and may reach 15 to 20, and very rarely 30 millimetres. On the other hand, he also found the globules so small that they could not be measured. At the beginning of suction of the milk the diameter of the globules varied from 2.5 to 12 or 15 millimetres; toward the end of the suckling they are more regular,—from 7 to 8 millimetres. In cows' milk the globules are generally smaller and more regular in size.

The authors found an average of 3.21 per cent. of fatty matter in woman's milk, and 3.5 in that of the cow. In cows pastured in the mountains the amount of fat was increased to 3.6 and 3.7 and sometimes even 4 per cent. To determine the percentage of fatty substances in milk the author recommends Gerber's acidbutyrometer and butyrometer.—*Norsk Magazin for Läger*, p. 906, 1896.

Poland.

DR. J. DRZEWIECKI,

Redaktor Korespondent z działu polskiej literatury tyczącej się: Medycyny ogólnej i lecznictwa; pediatryi; akuszerzyi; ginekologii; laryngologii; otologii; hygieny; demografii; medycyny sądowej; histologii; patologii; bakteryjologii; anatomii; fizjologii.

Wszystkie pisma lekarskie, dzieła, rosprawy, monografije, itd., w języku polskim wydane, a tyczące się przedmiotów powyższych, winny być nadsyłane pod adresem

DRA. DRZEWIECKIEGO,
87, Krakowskie Przedmieście,
Warszawa,
Królestwo Polskie.

The Present Status of Surgery of the Kidneys.—PROFESSOR OBALINSKI delivered a lecture on this subject at the Eighth Congress of Polish Surgeons in Cracow, and basing himself upon a close examination of the literature and upon his own cases, formulated the following conclusions:—

1. The most frequent symptoms—*i.e.*, pain, enlargement and displacement of the kidney—show us which kidney is affected. When there is hæmaturia, it is only in exceptional cases that this cannot be decided, and here only an examination of the bladder with the cystoscope will prove from which ureter the blood or pus flows.

2. It is only in distinct and developed cases of affections of the kidneys that we can fully make out a diagnosis and the consequent therapeutic indications by external examination only; most frequently, especially in the beginning, we must have recourse to exposure of the kidney or even incision of the same. If there is difficulty in deciding whether the kidney or some other organ (gall-bladder, for instance) is affected, it is necessary in grave and urgent cases to decide the question by laparotomy. Where, however, we are sure that the kidney is affected, and the only question is the severity of the affection, we should expose the kidney by an extraperitoneal incision.

3. To-day the conservative tendency prevails, and our endeavors are to preserve as much as possible such an important organ as the kidney. We

only sacrifice it, therefore, when we have concluded that it contains within itself a focus that may be injurious to the remainder of the organism, or when the parenchyma has become so degenerated that its function is rendered impossible. Thus, there are only two absolute indications for nephrectomy,—namely, when in the greatly enlarged kidney a malignant growth or primary tuberculosis are positively diagnosed. The other indications will be only relative,—that is to say, will have their significance only when, after exposing the kidney or even after its incision, we have convinced ourselves of its useless function.

4. The experience so far gained by the practice of nephrectomy teaches us that, when a considerably enlarged and hard kidney can be felt before the operation, it is already or almost deprived of its natural function, and is also usually a proof of the capacity of the other kidney to perform the functions of both.

5. In view of this and the frequently demonstrated fact that even a seriously affected kidney, remaining after the extirpation of the other, may fulfill the functions of both, the requirement of an examination of the urine of each kidney separately should be considered as unnecessary and as impeding the development of surgery of the kidney. This is especially the case since Sawlik's method of catheterization of the ureters (the only one known and employed) is troublesome and unreliable, and may even be dangerous in some cases,—namely, if there are morbid microbes in the bladder, which are transferred by the catheter into the ureters or even the renal calices.

6. When, in the kidney to be operated upon, we suspect that there is still a certain functional capacity, we should never sacrifice it, but act conservatively and resort to nephrotomy, which best facilitates the examination of the condition of the other kidney.—*Gazeta Lekarska*, Nos. 40 and 41, 1896.

Treatment of Gonorrhœa by Janet's Method.—BORZENCKI applied this method in 41 cases of gonorrhœa, strictly following the indications of its author. Hypermanganate of potassium was used in 1 to 4000 and 1 to 1000 solutions. In all the cases microscopical examination revealed the presence of gonococci before the treatment. Nine cases were treated in the very first period of the disease. In 6 cases the posterior part of the urethra was affected; in 26 cases the disease lasted from one month to one year. In 28 cases complete recovery followed, and in the remaining 13 the result was negative. Only in 1 case was epididymitis developed during the treatment. In the cured cases the number of irrigations did not exceed twelve in any one case. The author considers such cases as cured in which, after a lapse of from one-half to one month after the treatment, there was no discharge from the urethra, and in which no gonococci could be found.—*Przeglad Lekarski*, August 22, 1896.

Russia.

DR. J. DRZEWIECKI,

РЕДАКТОР-КОРРЕСПОНДЕНТ изъ области русской литературы, касающейся: Общей медицины и терапіи, педіатріи, акушерства, гинекологіи, ларингологіи, отологіи, гигіены, демографіи, судебной медицины, гистологіи, бактеріологіи, анатоміи и физіологіи.

Всѣ періодическія, медицинскія изданія, сочиненія, статьи, монографіи и т. д., изданныя на русскомъ языкѣ и касающіяся вышеупомянутыхъ предметовъ должны быть адресованы на имя

ДРА ДРЖЕВЕЦКАГО.

87 Краковское Предмѣстье,

Варшава.

The Value of Bianchi's Phonendoscope.—B. M. SHAPOSHNIKOFF, after trying Bianchi's phonendoscope on over one hundred persons, some of whom were healthy, while others presented morbid changes of the lungs, reached the following conclusions: 1. It is very doubtful whether the phonendoscope could give, as Bianchi asserts, a very exact determination of the internal organs. 2. Examination with the phonendoscope has no advantage over other methods. On the contrary, the increase of sounds and noise produced by the phonendoscope may, in many cases, impede their proper appreciation. 3. Besides, the construction of the phonendoscope itself causes the formation of foreign sounds and noises in it. 4. The strong and distinct sounds through the phonendoscope during prolonged examinations fatigue the physician very much; moreover, according to the author, such sounds have even an injurious influence on the hearing.—*South-Russian Medical Gazette*, September 19, 1896.

The Influence of Subcutaneous Injections of Spermin and Musk on the Composition of the Blood.—Basing himself upon personal experiments made upon men, some of whom were healthy, while others were suffering from pneumonia or typhus abdominalis, EPIFANOFF has reached the following conclusions: 1. Injections of spermin and musk do not change either the contents of hæmoglobin or of the red corpuscles, neither in healthy persons nor in those having croupous pneumonia or typhus. 2. After such injections the quantity of white corpuscles in healthy persons is first diminished and then increased, usually in from three to five hours after the injection. 3. In grave cases of abdominal typhus with lethal tendency the injections of musk diminish the already small quantity of the white corpuscles, and in the later periods of the disease occasion changes resembling those observed in the healthy; finally, at the acme of the disease, they produce no changes. 4. In patients with croupous pneumonia the injections made on the eve of the crisis almost always occasion diminution of the general quantity of the white corpuscles, and during the remainder of the disease either produce no changes or changes similar to the changes produced in healthy persons, but only in a higher degree.—*Inaugural Dissertation*, St. Petersburg, 1896.

Clinical Notes and Therapeutic Suggestions.

The Serum Test in Typhoid Fever.—This question has been the subject of considerable discussion these last few months, particularly since the communication made in this connection at the congress at Nancy by Widal, of Paris. The value of the procedure is no longer questionable. Widal and Sicard, Achard, and Bensaude have published interesting articles on the coagulative properties of the serum in typhoid patients. The two cases reported below prove in an undeniable manner the clinical advantage presented by this method for the recognition of typhoid fever in cases in which the diagnosis cannot be based upon precise symptoms. A pathognomonic sign, which was formerly not within our knowledge, is now at the disposal of every one, while typhoid fever has definitely established its identity as a specific disease, which was denied it by certain distinguished physicians only a few years ago. De Grandmaison reports the two following cases, in which the disease was only recognized by serodiagnosis. The bacteriological experiments were all made at the Broussais Hospital by the author, assisted by Dr. Fontoynon, his interne.

Case I.—On August 15th last de Grandmaison was called upon to attend a little girl, 9 years old, who had been suffering since July 21st. The temperature, which was taken regularly, did not present the exactness of the thermic curve in typhoid fever, and, moreover, there was no diarrhœa, no lenticular spots, nor any hypertrophy of the spleen. The general condition of the child was bad, the speech slow, the fæces pale, the tongue parched, and the breath fetid. Auscultation revealed a diminution of the respiratory murmur at the right apex, which also presented a slight dullness upon percussion; these pulmonary symptoms, added to a rather marked degree of intellectual obnubilation, suggested the possibility of tuberculosis. Not being able to make a positive diagnosis, he decided to resort to the serum test. On August 26th several drops of blood were obtained from the forefinger of the child, which were mixed, on the following day, with 1 drop of serum and 10 drops of the pure culture of the typhoid bacillus, forty-eight hours old. After half an hour, numerous agglomerations of the bacilli could be distinguished with the microscope which, at the end of three hours, were absolutely characteristic as regards dimension and immobility. The diagnosis was thus established, and was confirmed later on by the course of the temperature and the marked hypertrophy of the spleen. From that time on the patient took eight baths at 18° C. (64.4° F.) every twenty-four hours until the 16th of September, when the fever left her and convalescence began. The child is now perfectly well and has regained her vivacity, cheerfulness, and good appetite.

Case II.—On August 14, 1896, a mason, 43 years old, and an averred alcoholic, presented himself at the Broussais Hospital for some gastric trouble. The man retained his appetite, but the urine was somewhat albuminous and there was diarrhœa. A purgative and milk diet were prescribed. In the evening, however, the temperature rose to 38° C. (100° F.), the gastric disturbances continued, and the general condition grew worse.

Although the existence of typhoid fever did not seem likely, the serum test was resorted to, and, contrary to all expectations, furnished precise indications. The bacilli of Eberth accumulated rapidly in large groups.

Two days after this examination, which was made on August 26th, the fever became violent, the rectal temperature rose to over 40° C. (104° F.), and the general condition became alarming. On August 31st the patient succumbed, notwithstanding the balneotherapeutic treatment, after having had two very abundant intestinal hæmorrhages, during which the peripheral temperature was not lowered in the least. The diagnosis was fully confirmed at the autopsy, when characteristic lesions of enteric fever were revealed.—*La Médecine Moderne*, December 12, 1896.

The Serum Test of Widal and the Possibility of its Application Without Microscopical Examination.—Charles Lyman Greene, of St. Paul, Minn., expresses the opinion that this test is absolutely pathognomonic, whether performed with fresh or with dried blood. In support of this view he cites a series of cases, and calls attention to the fact, not hitherto mentioned, that even macroscopical methods may suffice for its application.

Pfeiffer, in May, 1894, found that cholera vibrios, mixed with the serum of an immune animal and injected into the peritoneal cavity of a guinea-pig, lost their motility and underwent a peculiar change in physical characteristics. In November, 1894, he found that typhoid bacilli underwent similar changes, and he also found that the blood-serum of a typhoid-fever patient would produce the same results. Gruber, in 1895, found that if the serum of an immune animal were added to a bouillon culture the bacilli became agglutinated and lost their mobility. No use was made of these discoveries, however, save as a means of identifying the bacillus, and to Widal, of Paris, belongs the credit of transposing these findings and adapting them to the needs of clinical diagnosis by studying the effect of the blood-serum of a typhoid patient upon the pure culture of the bacillus typhosus.

He first reported his clinical results on June 26, 1896, and later suggested the use of dried blood instead of the fresh serum, when the latter could not easily be procured. The present status of the test justifies the following statements:—

(*a*) That the blood or blood-serum, and very frequently the urine, of a typhoid patient, by virtue of a specific antitoxin, causes, when added to an emulsion of the pure culture of Eberth's bacillus in hanging-drop or ordinary cover-glass preparations, a characteristic loss of motility, with agglutination and grouping, of the bacilli.

(*b*) That this reaction may, and generally does, occur as early as the fourth or fifth day and is variable on the eighth or ninth, lasting generally throughout convalescence, and very often for many months after complete recovery. (Widal thinks for years in some cases.)

(*c*) That the antitoxin of a typhoid patient acts thus only upon the bacillus of typhoid. (This has been denied as to the colon bacillus, but the denial is immaterial from a clinical stand-point.)

(*d*) That the blood-serum or urine of patients suffering from diseases other than typhoid does not so affect the typhoid bacilli.

(*e*) That dried blood retains the antitoxin unchanged and may be used when the fresh blood or serum is unobtainable. The antitoxin remains unchanged in dried specimens for weeks, and probably for several months.

(*f*) That the test is, therefore, pathognomonic of typhoid and easily applicable to the use of public laboratories.

The fact that no adverse reports have appeared attests the simplicity and reliability of the test. Its application requires only the possession of a moderately-high power lens,—$\frac{1}{4}$ to $\frac{1}{6}$ objective (an immersion objective is not necessary); a tube containing the pure culture, such as may be easily obtained from a public laboratory; and such a rudimentary knowledge of bacteriological technique as will serve to prevent the contamination of the pure culture used and permit proper re-inoculation of fresh culture-tubes from time to time (about every two weeks). For such as do not possess these facilities the public laboratories should offer a means of ready assistance. The practitioner would then need only to sterilize the skin of his patient's finger or ear, draw á drop or two of blood, transfer it to a cover-glass, visiting-card, or any other similar object, and send it closely sealed to the laboratory.—*Medical Record*, December 5, 1896.

Practical Treatment of Typhoid Fever.—C. E. Skinner, alluding to the general belief that a too rapid return to solid from a liquid diet is capable of inducing a relapse of the disease, expresses a contrary opinion. This fever is infectious, and if, in any given case, it started to run another cycle, there must certainly have occurred another infection with fresh germs. It is much more logically explained by the probability that the fæces had not been thoroughly disinfected early enough to kill all the micro-organisms, and that some article—clothing, bedding, or the carpet, for instance—had suffered contamination. As their virulence is not destroyed by drying, it would be quite possible for some of them to effect a re-entrance into the patient's intestinal tract and set up mischief anew. Too heavy (*i.e.*, indigestible) a diet would be likely to produce acute dyspepsia, with its accompanying systemic disturbances, and this would be rendered more intense and easier of induction by the debility present; but the author does not believe that it ever directly caused a relapse into true typhoid fever.—*New York Medical Journal*, October 24, 1896.

Anæsthesia by Ethyl-bromide.—In an article upon the above subject W. H. Kelson states that, when cases requiring small, but painful, operations have to be summarily dealt with, as in the out-patient department of a large hospital, ether, chloroform, cocaine, and the various sprays are liable to prove unsuitable anæsthetics, either from the time they take, the vomiting they cause, the after-attention required, or their inefficiency. Nitrous-oxide gas is, of course, not open to these objections, but over it bromide of ethyl—C_2H_5Br.—has the great advantage of portability and simplicity as regards the apparatus required for its administration.

On the all-important question of safety, reviewing the work of Silk, Chisholm, Terrier, Cumston, Roaldes, and others, and especially of the more recent writers, the verdict would seem, on the whole, decidedly in its favor.

The following cases are cited as examples of small operations for which it proved quite sufficient: 7 cases, removing nails or parts of nails; 6 cases, breaking down adhesions; 4 cases, scraping sinuses; 1 case, partial circumcision; 2 cases, scraping carbuncles; 1 case, scraping small patch of lupus; and 1 case, removing tonsils.

Specimens of the liquid varied in efficiency. One, which had been kept some time, had to be abandoned, as it seemed quite ineffectual, but had not changed color. Another was of a brownish tint, presumably from free bromine, but it had not the suffocating odor of that liquid, and acted well.

The method of administration was as follows: About 1½ drachms (6 grammes) of the bromide were poured on the sponge of an Ormsby inhaler, and the latter applied. There was very little tendency to excitement or struggling, and in about sixty seconds the cornea became insensitive and the breathing snoring. The inhaler was then removed and the operation proceeded with, the patient showing signs of returning consciousness in a variable period, but certainly averaging over sixty seconds.

Vomiting occurred in 2 cases, but seemed to depend chiefly on the distended condition of the stomach. In these cases the inhaler had not been re-applied, but in 2 in which this was done there was no vomiting, though the patients seemed more exhausted afterward.

In 5 cases rigidity came on immediately after the cornea became insensitive. This, in the case of tonsillotomy, interfered with the introduction of the gag, and the inhaler had to be re-applied.

In the case of 1 subject, afterward found to be addicted to alcohol, the bromide having been administered for sixty seconds without any signs of anæsthesia supervening, seemed suddenly to take effect, and great rigidity, rapid breathing, and some lividity were produced, which, however, rapidly passed off.

The respiration was, as a rule, regular, and the pulse somewhat quickened. The recumbent posture, in all cases, was the one adopted. The patient's ages varied from 7 to 40. The younger ones took it most readily. All the cases felt well enough to depart within ten minutes of the administration, though some hysterical symptoms appeared in two while recovering. —*British Medical Journal*, December 12, 1896.

On the Use of Congealed Oils to Prevent the Reunion of Nerves After Their Subcutaneous Division.—J. Leonard Corning, of New York, believing that by the introduction of some new factor, not too complicated, he might be able to prevent the reunion of the nerve after its simple subcutaneous division, tried to carry the above-mentioned principles into practical effect. A non-irritant oil was accordingly prepared by melting the oil of theobroma over a water-bath and adding sufficient paraffin to bring the melting-point to about 105° F. The mode of application was as follows: After section of the nerve-trunk an ordinary hypodermatic syringe, armed with a somewhat coarser needle than that in common use, is filled with the melted oil, and immediately thereafter the needle is thrust into the tissues in such a manner that its point is brought as near as possible to the locality

in the nerve where section is to be made. The syringe is then gradually emptied, care being taken, by moving the needle to and fro, to deposit the oil at right angles to the nerve-stem. The oleaginous zone so formed should completely envelop the nerve and extend along the longitudinal axis of the same for at least an inch and transversely for an inch and a half. Immediately after the completion of the injection, which may be repeated if necessary, cold, in the form of a rhigolene-spray or ice, is applied above the injected zone. As a consequence of this manœuvre, the oil is immediately congealed, and interposes an impassable barrier which checks the prolongations of the axis-cylinders and prevents the rehabilitation of conduction.—*Medical Record*, December 5, 1896.

Treatment of Syphilodermata.—After a careful consideration and trial of the various methods of treating the syphilodermata, W. S. Gottheil, of New York, reached the following conclusions:—

1. In the primary stage, when only the chancre is present, no general treatment; calomel locally.

2. As soon as the secondary period sets in, as shown by the general adenopathy, angina, cephalalgia, and eruption, the internal treatment for mild cases should be $\frac{1}{4}$ to $\frac{3}{4}$ grain (0.16 or 0.50 gramme) of the protiodide of mercury three times a day, continued for three months, or until the symptoms disappear. In severer cases, with pustular eruptions, severe anginas, persistent headaches, etc., a course of six to ten intramuscular injections of 10-per-cent. calomel-albolene suspension (5 to 10 minims—0.33 to 0.66 cubic centimetre), at intervals of five to fifteen days, should be employed.

3. After completion of the course and cessation of the symptoms, apply tonics, etc., without specific treatment, for three months.

4. Then a second calomel course, as above, plus a small dose (15 grains —1 gramme) of iodide of potassium in milk after meals. This to be given whether later secondary symptoms of the skin and mucosæ appear or not.

5. Second intermission of treatment, lasting three to six months, according to the presence or absence of symptoms.

6. In the second year, if tertiary lesions marked by deeper and more localized ulceration are present, give the iodide of potassium in increasing doses (60 to 600 grains—4 to 40 grammes—daily), as may be necessary. Combine with it occasional courses of calomel injections. If no lesions appear, give a mild course of both.

The best local treatment of the syphilodermata is with the mercurial plaster-mull.—*Clinical Medicine*, November 25, 1896.

Superalimentation in Tuberculosis.—Lorchet lays emphasis upon the fact that the food which nourishes and is suitable for a healthy man, is not sufficient for tuberculous subjects; they require superalimentation, which, being methodically administered, modifies and finally greatly exceeds the amount required for nutrition.

This principle, which was established by Debove, led to forced alimentation by gavage, and it has happened that patients attacked by unsurmountable anorexia have in this way recovered their natural appetites. These not uncommon examples would appear to confirm the opinion of

Debove that there is no relation whatever between the appetite of a tuberculous subject and the digestive power of his gastro-intestinal juice.

In his work on the treatment of pulmonary phthisis Daremberg cites two recoveries obtained by forced alimentation, one being that of a young physician in whom the disease had reached the stage of softening and who was unable to take or retain the slightest food. Superalimentation by gavage not only enabled him to bear without any ill effects an exacerbation of the disease six months after the beginning of the treatment, but also to resume his practice under unfavorable climatic conditions, and to eat normally. His relative recovery was maintained in good condition six years later.

The second case referred to an hysterical phthisical patient who rejected everything she swallowed and who was emaciated to a skeleton-like degree. After five or six gavages she was able to swallow without the tube, and seven years later her recovery still persisted. At present gavage is no longer resorted to except in cases of necessity, such as uncontrollable vomiting and absolute anorexia. It is nearly always possible to overcome the disgust of the patients for their food by persuasion.

Meat-powder now forms the basis of superalimentation, as it can be administered by the mouth. Nutritious in small quantities and assimilable without fatiguing the digestive organs, meat-powder forms the aliment *par excellence* of the consumptive; whether given alone, by gavage, or mixed with various liquids, to patients unable to eat and consequently doomed to an early death, or administered in conjunction with their ordinary food to patients having a good appetite, meat-powder is the only substance which allows of an assured and methodical superalimentation.

In apyretic tuberculous cases the matter is very easy, and they can be given large doses of powder. Debove, Grancher, and Bouchard have noticed surprising improvement under these conditions. Even in cases where the patients had vesperal fever, with tuberculous infiltration or even softening, Daremberg has several times seen superalimentation rapidly bring up the general condition and cause the disappearance of the cavernous lesions. As for the patients having a fever, and who must not be overfed, no food is better calculated to antagonize the losses which expose these unfortunates to an early death. As stated by Debove, "we know what the future has in store for the consumptive who ceases to eat. He is consumed by the fever; has sudorific, intestinal, and bronchial losses; while his receipts are *nil*, and his expenses exaggerated."—*La Médecine Moderne*, December 16, 1896.

Blennostasine.—Walter F. Chappell, of New York, states that blennostasine, although somewhat analogous to quinine, is without many of its unpleasant qualities. The compound is a derivative of one of the cinchona-bark alkaloids and is a solid substance which crystallizes from dilute solutions in large, prismatic crystals, or from concentrated solutions in the form of small, needle-shaped crystals, very soluble in water and quite as bitter as quinine.

Blennostasine may be administered in the form of capsules, when

combinations are required; but for many reasons 1-grain gelatin-coated pills are preferable. The dose ranges from 1 to 4 grains (0.07 to 0.25 gramme) or more every hour, according to the effect desired. It has a marked contractile effect on the vasomotor supply of the upper respiratory tract, and, being non-toxic, is especially valuable as a substitute for belladonna, atropine, and similar drugs in hay fever, acute influenza, and rhinitis; also in intermittent rhinorrhœa, laryngorrhœa, and bronchorrhœa. It has a powerful sedative influence on the brain and spinal cord, and markedly diminishes reflex movements.

During the past two years the author has employed many of the alkaloid salts from cinchona in hay fever with only partial success, but during the past season blennostasine has replaced these and other internal remedies with gratifying results,—in fact, all hay-fever patients who have taken the remedy have been promptly relieved, and, though a recurrence of the symptoms the following year may not be prevented, the usual attack may be aborted if the treatment is begun sufficiently early.

Quinine is very popular with the laity for colds in the head and influenza, but it only modifies the symptoms and is rarely curative. Blennostasine has medicinal properties superior to those of quinine for arresting supersecretion, and, if given frequently and in sufficient quantities, will almost invariably arrest the sneezing and the mucous discharges of ordinary influenzal colds.

Hyperæsthetic conditions of the nasal mucous membranes are very favorably influenced by it; in one case seen by the author, in which there was alarming spasm of the glottis, rendered especially dangerous owing to the quantities of mucous which collected at night, was completely controlled by this drug.—*New York Medical Journal*, December 5, 1896.

Auscultation of the Heart During Chloroform Narcosis.—Robert Kirk, of Glasgow, gives the results obtained in two hundred cases of chloroform administration in which he had auscultated the heart. An ordinary binaural stethoscope, sufficiently lengthened by India-rubber tubing, was at first employed, but after some time he adopted the phonendoscope, connecting it, however, with the upper half of a binaural, and having a watch fitted in.

In a few cases the heart was auscultated in bed, either on the morning of the operation or the previous day, and it was found that a considerable acceleration of its action sometimes occurred, while in one case coupled beats developed, when the patient was afterward placed on the operating table. The further investigation may be divided into the following stages:—

1. The effect of the continuous inhalation of chloroform on the heart, as determined by the rate and character of its action before and during the process.

2. The effect on the heart ensuing when the inhalation was stopped or interrupted at any time.

3. The effect of retching or vomiting on the heart, as determined by a comparison of its action before and after these events.

Speaking generally of the entire results, it may be said that nearly every irregularity or variation in the action of the heart described in clinical text-books may come under observation during chloroform narcosis. The most marked changes have their starting-point either (1) at the beginning of inhalation, (2) soon after inhalation is stopped, or (3) within a minute after retching or vomiting. The effects which may be observed at either of these three periods are in some respects alike, and generally consist of acceleration, irregularity, or retardation of the heart's action. The first of these is most commonly the primary occurrence, and the other two secondary ; but this is not always so.

The commencement of inhalation may be signalized by a very sudden increase in the frequency of the heart's action, on the one hand, or the equally-rapid supervention of irregularity, on the other.

It is evident that the effects on the heart which may be produced by chloroform, as described in the paper, must be referable to one or both of two causes,—either (1) to susceptibility on the part of the patient or (2) to the method employed. It would appear that the following are indications of dangerous idiosyncrasy : (1) forcible impulse of the heart, with loudness of one or both sounds; (2) irregularity of the heart before inhalation ; and (3) liability to tachycardia or irregularity during inhalation. In the last case there is reason to fear a return of the same symptoms in a worse form during elimination. If we might judge from a few cases, syphilitic subjects seemed liable to dangerous results.

The author alludes to two faults observed by him during the administration of the chloroform. First and most important is the fault of stopping in superficial anæsthesia; the second, that of exhibiting an unnecessarily-strong vapor at the very first. He believes that, by avoiding these faults, evil effects on the heart would be reduced to a minimum, and to determine whether we attain this object we must avail ourselves of the help of the phonendoscope.—*British Medical Journal*, December 12, 1896.

The Bronchitis-tent.—In a clinical lecture delivered at the Hospital of the Jefferson Medical College, Philadelphia, H. A. Hare called attention to the so-called bronchitis-tent,—an apparatus which can be readily improvised in any household and which gives the patient great comfort in many conditions in which the respiratory passages are dry or irritated. It is useful in the treatment of ordinary spasmodic croup dependent upon a catarrhal condition of a child's larynx, which may be exacerbated by the fact that the child sleeps in a room heated by means of a furnace, the hot air of which is not only abnormally dry, but often laden with dust. It is of value in the treatment of persons who have been exposed to irritating fumes or gases, and who, as the result, are suffering from inflammation of the respiratory passages. In the early stages of bronchitis in children and adults it does much toward modifying the severity of the cough and the inflammation in the bronchial tubes, while in catarrhal and croupous pneumonia and whooping-cough it, in many instances, proves an invaluble aid to the other measures which are instituted.

The bronchitis-tent can be hurriedly improvised by tying to each

corner of the child's cot an ordinary broomstick, the broom end resting on the floor, and drawing over this frame one large sheet, or two small ones basted together, in such a way that the canopy falls over the broomsticks and down at the sides of the bed almost to the floor. In this way the child lies in a little tent, the top of which is elevated two or three feet above its head, thereby giving it plenty of air-space. At the foot of the bed is placed an ordinary Arnold steam-sterilizer,—an apparatus which can be used not only for the sterilization of milk for infant-feeding, but also for the sterilization of instruments. By having a small hole made in the lid, to which is soldered a pipe running off at an angle of 45 degrees, an apparatus is formed by which one can also develop and distribute steam in any place and in any direction desired. A very small alcohol-lamp serves to disengage a large amount of steam from this apparatus, because only a small amount of water has to be heated at a time. The large pan upon the copper bottom containing the boiling water acting as a reservoir, which continually provides a fresh supply of water, fresh water need only be poured into the apparatus at intervals of several hours. The end of the pipe attached to this sterilizer is made to project under the sheet forming the tent, and in a very short time the child is surrounded by an atmosphere which, on the one hand, is not so heavily laden with steam as to alarm it, and yet, on the other hand, is so warm and moist and balmy as to very quickly soothe its irritated mucous membranes. The child can sometimes be kept in this tent for a number of days with great advantage, and if well enough can be allowed to have its toys. By the use of a little ingenuity in the way of substituting flags for sheets, the physician can very frequently succeed in making his little patient happy in his confinement in the tent.—*The Therapeutic Gazette*, November 16, 1896.

The editor greatly regrets to have to announce the resignation of Mr. Eugene Devereux as a member of the editorial staff of The Universal Medical Journal. During the years that Mr. Devereux has been connected with the central office his ability and his gentlemanly qualities were greatly appreciated; he therefore not only gained the respect of those connected with him, but also their sincere friendship.

☞ ***Any journals, exchanges, reprints, monographs, or books not sent directly to the editorial office, 28 rue de Madrid, Paris, will not receive attention either in the "Annual" or the "Universal Medical Journal."***

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No. 28 RUE DE MADRID, PARIS, FRANCE.

THE HYPNOTIC EFFECTS OF PELLOTINE.

Prof. F. Jolly employed pellotine muriate on account of its ready solubility in water; his experience covers forty cases. From $\frac{3}{5}$ to $\frac{9}{10}$ grain caused several hours' sleep within a half to one hour after administration. In excitable and delirious patients these doses were insufficient. Even 2 grains did not produce sleep, but had a calming effect, which lasted all day. From $\frac{3}{4}$ to $1\frac{1}{4}$ grains were found equal in effect to 15 grains of trional or 22 to 30 grains of chloral. Prof. Jolly's report is generally favorable, and he concludes that he will continue the use of this new agent.

THE RATIONALE OF THE TREATMENT OF GOUT.

Dr. A. E. Garrod states that three results to be aimed at clearly present themselves: 1. It is desirable to limit as far as possible the formation of uric acid in the body. 2. It is desirable to promote the excretion of the accumulated urate in the urine. 3. It is desirable, if possible, to remove the deposits of sodium biurate in the solid tissues. It is, therefore, of interest in this connection to call attention to lycetol, a new uric solvent. The administration of lycetol in gouty cases has been promptly followed by increased diuresis, augmented excretion of uric acid in the urine, and relief of the subjective disorders. Its pleasant taste and absence of irritating effects on the stomach are additional advantages which commend its use in the more chronic forms of gouty troubles.

APOLYSIN.

Cerna observed relief of pain in lumbago and muscular rheumatism from the use of apolysin. Nencki and Jaworski used it successfully in febrile affections and neuralgia. Dr. G. Greif obtained an excellent result in obstinate infra-orbital neuralgia of twelve years' duration and in hemicrania. In influenza it relieved pain and reduced temperature. Apolysin may be given to adults in single doses of from 15 to 30 grains.

GLYCEROPHOSPHATES.

These preparations are of value in all cases where it is necessary to improve the nutrition and stimulate the activity of the nervous system, as in neurasthenia, chlorosis, anæmia, ataxia, phthisis, etc. They are also beneficial in Addison's disease and scrofula. Internally, the daily dose of the glycerophosphates of calcium, sodium, potassium, or magnesium is from 5 to 15 grains; of the iron combination, from $1\frac{1}{2}$ to 3 grains.

EUCAINE HYDROCHLORATE.

This substance, in 2- to 5-per-cent. solution, has been used in various affections of the eye. Schleich esteems it as a serviceable local anæsthetic to mucous membranes, and Saalfeld has employed it in painful skin diseases. Dr. Wehmer has utilized it in a number of very complicated gynæcological operations, and Dr. Hal Foster in operations upon the nose and throat. It has been successfully applied to dentistry and genito-urinary examinations.

THE

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IN ALL PARTS OF THE WORLD.

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Selections from Society Proceedings.

FRANCE.

Société française de Dermatologie et de Syphiligraphie.

Surgical Treatment of Lupus.—A patient suffering from lupus of the face was presented by Nélaton, who stated that, when he first came to the clinic, there was, besides the lupus, an enormous epitheliomatous mass. After removing this he instituted treatment for the lupus, which consisted in carefully scraping away the diseased tissues and filling the gaps made, at the same sitting, by Tagliacosi's method. He also presented a patient who was cured of a lupus of the face in six weeks by curettage and cauterizations with the thermocautery.

Brocq declared that the results were remarkable, particularly in the case of the first patient. In the second he found the cicatrices showing marked tendency toward keloid transformation. He stated that, eight months since, he was consulted by a woman having an enormous facial lupus, which had resisted all attempts at medical treatment. Surgery was then resorted to, and after four weeks she returned, greatly improved. He considered that in all the cases in which medical treatment failed surgical procedures should be resorted to. Nélaton argued that the keloids were mainly due to the use of the thermocautery.

Du Castel remarked that, since Nélaton considered the thermocautery responsible for the production of keloids, it would be well to beware of cauterizations in the treatment of facial lupus, and called attention to the fact that the use of chemical caustics was liable to cause similar results.

Nélaton then stated that all the diseased points had been cauterized, but that the keloids were only formed in the regions where the cauterizations were very deep.

Brocq believed that it was especially necessary to penetrate very deeply in treating lupus of the face.

Du Castel presented a patient having an erythematous lupus. The primary symptoms were first noticed eight years ago, and the disease progressed by irregular attacks, with exacerbations and improvement without any recognized known cause. The face, ears, and scalp were covered with erythematous plaques and cicatricial spots. Five years previously the patient had severe facial erysipelas. Since that time the centre of the face had become covered with a thick, squamous, fatty mask, adhering closely to the dermis and giving the patient a very peculiar appearance. The backs of the hands are covered with distinct plaques of erythematous lupus and cicatrices; these lesions are also very marked in the palms of the hands. They become aggravated every winter and improve in the summer, which is the rule in erythematous lupus of the hands. The patient is not phthisical, but one of her sisters died of pulmonary consumption and one of her children suffers from suppurative cervical adenitis.

Société de Chirurgie.

Discussion upon Cancer of the Liver Surgically Considered.—Routier reported a case, observed by him in 1891, illustrating the difficulty in diagnosing cancer of the liver. The patient was a woman who had been having trouble with her liver since about a year. There was a tumor upon the anterior border of the organ. The diagnosis was undecided as to whether it was cancer of the liver or a tumor of the biliary vesicle. A puncture was made and pus withdrawn, and an hydatid, suppurating cyst of the liver was diagnosed. A large drainage-tube was then inserted in place of the large cannula of the trocar, from which a grayish, dirty-looking substance exuded. Several days later fever set in. Laparotomy was then decided upon, and a sac containing detritus resembling hydatid *débris* was found. The patient died several days later. The autopsy showed the existence of cancer of the liver (epithelioma with multiple nuclei), and the sac observed was a modified cancerous nucleus, which had been mistaken for a suppurating hydatid cyst.

Quénu stated that he had seen a case in 1895 in which the conditions were as follow: The patient was a cachectic, elderly woman who had a painful and voluminous tumor of the liver. Fever existed, together with all the signs of abscess of the liver, and a probable cancer was diagnosed. Surgical intervention was proposed and accepted. Lateral laparotomy was performed and the principal mass was punctured, a sort of pus and softened matter being found and removed. The histological examination of this substance demonstrated that it was composed of typical degenerated epitheliomatous cells. Consequently, in this case, like in that reported by Routier, the cancer of the liver had given rise to a sort of abscess with a puriform nucleus, which presented the appearance of an abscess of the liver.

Ricard stated that the question of surgical intervention in malignant

tumors of the liver had also been brought before the society by Segond, in reference to a personal case. On this occasion Terrier had described a process of intrahepatic suture invented by a Russian surgeon, which allowed of the extirpation of such tumors without any appreciable loss of blood, and his pupil, Auvray, gave the results of three very interesting experiments. Hæmorrhage forms the serious danger which makes the extirpation of malignant tumors of the liver very perilous. The newly-perfected procedures may, perhaps, render possible the extirpation of non-vascular hepatic tumors, but it is well to remember that there are essentially vascular tumors of the liver in which the slightest wound, even that of a needle, may be rapidly fatal. Terrier also had a case in which a simple puncture made with a bistoury caused the death of the patient upon the operating-table. The speaker himself had a case of this kind, in which he had great difficulty in controlling a hæmorrhage due to a puncture made with a trocar almost as fine as a hair.

The difficulty, not to say the impossibility, of a clinical diagnosis of these tumors, which are fortunately rare, warranted the speaker in giving an account of the following case: "The patient was a young woman, about 32 years old, who had been suffering since several months from dyspeptic disturbances with vague epigastric pains. She had been treated some little time for a gastric affection, when a swelling showed itself in the epigastrium. It was at this time that I was called in. The swelling was median and distended the epigastric depression; it was about the size of a fœtal head, was regular, and almost fluctuating; it was mobile in the respiratory movements, and absolutely indolent. I diagnosticated an hydatid cyst of the liver, and even to-day, while acknowledging the error made, I hardly know what other diagnosis could reasonably have been made. In order to confirm my opinion I made a puncture with a Pravaz syringe. This puncture did not give issue to any liquid, but this being frequently the case in hydatid vesicular cysts and my needle having been so small, my diagnosis remained the same, and surgical intervention was decided upon. I practiced laparotomy with the aid of two of my internes. The abdomen being opened, we at once saw the hepatic tumor, showing the shape and dimensions as previously outlined, but, instead of having before us the more or less translucid covering of an hydatid cyst, we found hepatic tissue of a slightly-violet hue. Moreover, the growth, instead of expanding the sharp edge of the liver, projected over it without involving it,—a condition scarcely ever observed in cases of distension of the liver by a parasitic tumor. I made a puncture at the culmination point of the tumor, with the small trocar of Potain's apparatus. A jet of dark blood sprang out as though the point of the instrument had penetrated into an enormous blood-vessel. I raised the point of the instrument several centimetres and pushed it in, in another direction. The result was the same, a veritable jet of blood coming out through my cannula. I then withdrew the trocar, having decided not to pursue my explorations any farther, but the orifice continued to bleed in an alarming and continuous way. I endeavored to close it by Lembert's suture, but the perforations made by the needle gave rise to the

same hæmorrhage, which I was only able to control by means of cauterizations at a dull-red heat, and compression during more than twenty minutes. Finally, the hæmorrhage being arrested, I was able to close the abdomen. The results of the operation were limited to severe abdominal pain during the first few hours. The stitches were withdrawn on the tenth day. The patient seemed well for about six weeks and believed herself cured. Unfortunately the symptoms soon began to be aggravated; the tumor increased in volume, becoming almost double the size in a few weeks; an hæmorrhagic effusion occurred, which necessitated several punctures. The lower limbs became œdematous, the cachexia made rapid progress, and the patient succumbed four months and a half after the operation. Unfortunately an autopsy was not allowed, but the rapid evolution of the malady and the manner of its termination leave no doubt as to the malignant nature of the hepatic tumor and would suggest a vascular sarcoma.

"In reporting this case I do not mean to decry the extirpation of hepatic tumors in general, but rather to call attention to these exceptional tumors, the excision of which does not appear to be feasible."

UNITED STATES.

Suffolk District Medical Society.

Treatment of Malignant Disease.—Gay, alluding to the care that should be given in surgical diagnosis, states that, figuratively speaking, there should be no such thing as a sprain of the wrist nor a contusion of the hip. The lesson intended to be conveyed is that every injury of the wrist had better be regarded as a Colles fracture, unless there is certainty of its being something else; and that every injury to the hip, especially if the person cannot walk, is a fracture of the neck of the femur, until it is proven beyond a reasonable doubt to be something different. Were these maxims adopted by physicians during the earlier part of their professional life, we should, the speaker thinks, see fewer cases of unrecognized broken hips and of "sprains" of the wrist having a deformity characteristic of Colles's fracture.

A like assertion might well be made in regard to the nature of many small, young tumors, especially of the female breast. They are malignant until properly investigated and found to be benign. By adopting this rule more of these lumps would be removed at the only time when it is possible to effect a permanent cure of malignant affections, if there be such a period in their growth.

The question is: can malignant growths be detected early enough to be removed before the lymphatics have become involved beyond the surgeon's reach? Unless that can be done, we need not expect a large percentage of permanent cures from operations or from anything else. This is a difficult matter to decide, from the fact that so few patients come to our notice sufficiently early. And, furthermore, some of us are too prone to advise

these patients to wait until the growth shall present diagnostic features of more or less distinctness, thereby losing the golden moment for interference.

As to what constitutes a "cure" of malignant disease, Volkmann, so often quoted, states that, if a woman with cancer of the breast remained free from disease at the end of one year after its removal, a cure might be hoped for; if she remained well at the end of two years, a cure could be expected, and, if free from disease at the end of three years, a cure was almost certain to be effected. We all know that this is not true here.

Twelve years ago last March the speaker had removed the tongue and anterior portion of the lower jaw for malignant disease. There was no return for ten years. The patient now has a large mass of cancerous glands upon both sides of the neck. In his opinion, he was never cured, although he had no outward evidence of the disease for ten years after the last operation. If a person, having been operated upon for malignant disease, live many years and die from something else, it is fair to say that he was cured of the original malady. But should it ever return, however late in life, he questions if a permanent cure—in the sense that we speak of cure of fatty tumors, for instance—can be claimed.

There is one other point in connection with malignant disease which does not receive quite the attention from surgeons that its importance demands, and that is the after-treatment. Too many operators think that the patient, having recovered from the operation, there is nothing more to be done, until the disease again makes its appearance. While the speaker is not and from the nature of the thing cannot be positively certain that drugs do any real good in delaying or preventing a recurrence of malignant disease, yet he had seen enough benefit attending their persistent and prolonged use during the past fifteen years to justify their continuance and to recommend them to others. He prescribed the compound tincture of iodine in doses of 2 to 5 drops three times a day after food. J. S. Wright, of Brooklyn, gives the bromide of arsenic in doses of $\frac{1}{40}$ to $\frac{1}{10}$ grain (0.0015 to 0.006 gramme) three times a day in breast cases, and thinks he has seen positive benefit derived from its prolonged use. Those patients should never be lost sight of, but should be seen at intervals of a few months, or at once, should any suspicious change take place in the scar or vicinity. In this way will the patient's mind be occupied in a rational way, his hope be stimulated, and, if fortunate, he will be kept out of the clutches of the swindlers, who are always lying in wait for these victims of malignant disease.

Early and thorough operations; intelligent dissections with a view to tracing infected lymphatics, as recommended by Dr. Warren; and persistent and prolonged after-treatment constitute the groundwork of the modern method of dealing with malignant affections. Although the results have been hitherto far from satisfactory, it would seem likely that it is along these lines that we must expect any great improvement in permanently eradicating the disease.

Alluding to malignant disease as it affects the urinary tract and in gen-

eral to cancers in operable regions, P. Thorndike laid emphasis upon the fact that it is not proper that we should be deterred from performing such operations because of the existing statistics which are at our disposal. Gross's statistics for cancer of the kidney show 70-per-cent. mortality; statistics collected last year in much larger numbers show that up to 1890 the mortality was almost as great as Gross's,—50 per cent. to 60 per cent., —while since 1890 the mortality had been between 20 per cent. and 25 per cent.; so that, granting that the indication for such operations is an exceptional one, we should not be deterred from operating on the occasional suitable case by this mass of old statistics which are practically the only ones at our disposal at present.

Speaking of the percentage of cures, Warren had just published some statistics concerning the breast, and had taken all classes of cases that came to the hospital, of all degrees of malignancy without making any particular selection. He had undertaken to operate on all cases which were capable of being mechanically removed as far as the naked eye could see, and had obtained in a series of sixty-two consecutive cases about 27 per cent. of cures,—that is, cases that have gone over three years without recurrence. He had seen one or two examples of recurrence after long periods, such as Dr. Gay refers to. In one patient he had removed, two years before, a nodule from the breast operated upon seven years before for cancer, and Warren regards that as a case of a new infection of the paramammary glandular structure,—that is, primary disease in the glandular structure which is independent of the mammary gland.

In regard to the post-operative treatment of cancer, he recommended the post-operative treatment of most surgical diseases. The surgeon should not be satisfied with the position that an operation is a panacea; it should be merely an aid to further treatment, and therefore we ought to experiment as much as possible in the post-operative treatment of malignant disease. He had tried the bromide of arsenic, and also the solution known as Roswell Park's solution,—arsenic, mercury, and gold (prepared by Metcalf). From 10 to 25 drops, three times a day, given a year or two, are supposed to have a deterrent effect on the recurrence of the disease. Coley has obtained a toxin for the treatment of cancer. A number of drugs are used for that purpose, but thus far no satisfactory results have been obtained. The latest one, which he is now using in connection with E. S. Wood, is an article known as "thiosinamin," composed of oil of black mustard, 2 parts; absolute alcohol, 1 part; aqua ammonia, 7 parts.

An alcoholic solution of this is used, and about $\frac{1}{2}$ to 2 grains (0 03 to 0.14 gramme) twice a week is given for several months, as recommended by Sinclair Tousey. The injection for cancer of the breast is made behind the scapula. It is said to be beneficial for lupus, keloid, and inoperable cancer. A careful inquiry in other cities as to other drugs has brought out a few satisfactory results. Park uses a 1 to 500 solution of pyoktanin injected into the tumor. He thinks he has delayed the growth by this treatment. Serum therapy has been used, but careful inquiries fail to bring out any satisfactory results from any form of treatment.

Treatment of Diphtheria.—C. F. WITHINGTON having read a paper on serum therapy, McCOLLOM stated that, from September 1, 1895, to October 1, 1896, at the South Department of the Boston City Hospital, there have been 1972 cases of diphtheria treated with antitoxin; not simply mild cases that would get well without treatment; not slight attacks of sore throat in which there were positive cultures; but clinical cases of diphtheria in which there was a considerable amount of membrane, and the cultures showed the presence of the bacillus of this disease. Of these 1972 cases, 1906 were discharged well; 266 died, giving a percentage of mortality of 13. In the old wards of the Boston City Hospital, from 1891 to 1894, when antitoxin was not used, there were 1062 cases treated, with 493 deaths, giving a percentage of 46. It would seem that this diminution in the death-rate must be due, in a great measure, to the use of antitoxin. Of these 1972 cases, 70 died within twenty-four hours of admission,—a certain number of these within two or three hours, and a part within twelve hours of admission. If these 70 moribund cases are eliminated, the percentage of mortality is found to be about 10.

A great deal has been said about the injurious effects of antitoxin. It has been claimed that it causes albuminuria. Of some 142 patients, the urine of whom was examined before and after the use of antitoxin, it was found that in 76 albumin was absent during the whole course of the disease. In 32 cases the amount of albumin was the same. In 19 cases albumin was diminished and in 15 it was slightly increased, but never to such an extent as to give cause for anxiety. Much has been said about the eruptions that follow the administration of antitoxin. While it is perfectly true that various eruptions are caused by the use of antitoxin, these eruptions are not serious complications. About 120 of the 1972 cases had post-antitoxin eruptions. There is another complication that is, perhaps, a greater source of annoyance than these eruptions,—namely, joint-pains which simulate rheumatism and may continue from twenty-four to forty-eight hours.

Perhaps one of the most striking beneficial effects of antitoxin is in the laryngeal cases of diphtheria, in which intubation seems imperative. After twelve hours, in certain cases, the breathing becomes easy and regular, and the case proceeds uninterruptedly to a cure. The progress of cases that come to intubation is rendered much more satisfactory by the use of antitoxin. A report of 150 cases compiled by F. E. Waxham, of Chicago, before the days of antitoxin, gives the percentage of mortality as 72 per cent. In 100 cases reported at about the same time by O'Dwyer, of New York, the percentage of mortality is 73. In the Boston City Hospital, for the year ending January 31, 1895, the percentage of the mortality of intubation was 83. In the South Department, for the year ending October 31, 1896, there have been 200 intubations, with a death-rate of 53 per cent. It must be borne in mind that many of these cases were moribund at the time of entrance. Such a marked diminution in the death-rate can only be explained by the use of antitoxin.

The action of antitoxin in favorable cases is quite characteristic. At the end of twenty-four hours after the injection the membrane commences

to roll up at the edges. At the end of forty-eight hours it is completely detached. In specially-severe cases it is sometimes necessary to give two or three doses at intervals of twenty-four hours. Alcoholic stimulation is a very important factor in the treatment of cases of diphtheria. It is not sufficient to give antitoxin and do nothing else. The patient must be stimulated and nourished in every possible way.

A good deal has been said regarding the situation for the injection. The speaker had tried the thigh, abdomen, lumbar region, and thorax, and had come to the conclusion that the upper part of the thorax near the posterior axillary line is the best place.

The dose of antitoxin has not been absolutely settled, but there is no evidence that a large dose gives rise to any trouble. The different preparations vary so much in strength that it is impossible to lay down any definite rule regarding the quantity to be used; 2000 units, which in one preparation may mean 5 cubic centimetres and in another preparation 10 cubic centimetres, should be given as an initial dose to an adult. In the case of children, a proportionately-smaller dose should be given. The effect of antitoxin in diminishing the disagreeable odor in septic cases is very marked,—so much so that it cannot fail to attract the attention of any one who treated diphtheria before the discovery of this agent. Any one who treated diphtheria before the days of antitoxin can have only one opinion regarding its efficacy.

Withington emphasized the importance of the use of injections of antitoxin in cases of presumed diphtheria when the cases first come under observation. The value of the treatment is so largely dependent upon the early stage at which it is used that no time should be lost; and if the case is one of undoubted diphtheria all those who have had much experience with antitoxin would say it should be given at once. The question then comes as to what shall be done in doubtful cases,—cases where we see a throat which looks suspicious, where we must wait twenty-four hours for the bacteriologist to make the diagnosis for us. In children where we have reason to think an exposure has occurred,—as, for instance, in those attending public schools,—he believes it is the part of wisdom not to wait for the bacteriological examination, but to make an injection of antitoxin, and, if it turn out that the patient did not have the disease, no particular harm is done. On the other hand, if twenty-four to forty-eight hours are lost, they cannot be made up. It is proper, under these circumstances, to give the patient the benefit of the doubt.

Tuberculin and Antiphthisin.—V. Y. Bowditch confined his remarks to personal experience in the use of tuberculin and antiphthisin,—remedies with which he had only limited experience, but in the use of which the conditions recommended have been faithfully carried out. He had previously alluded to his experience with tuberculin at the Carney Hospital at the time when the excitement over Koch's lymph was at its height. One of these cases was tubercular disease of the skin on the hand; the others (only two) cases of more or less advanced phthisis. In all of those, as far as any remedial effect was concerned, the results were negative; but,

although he had seen nothing to indicate any deleterious effect from the remedy in his cases, the experience of others made him feel that he should wait for further news from Koch before trying it again.

He had not yet changed his mind, even though impressed by the experience of those whose opinions he respected, and he kept in mind Virchow's allusions to the possibility of starting up fresh processes of miliary tubercle. Certainly tuberculin is not to be used except under the strictest supervision.

When Klebs proclaimed that in antiphthisin we had a remedy which could be used with perfect safety, as it contained the virtues without the evil effects of tuberculin, he felt it could be used at the Sharon Sanitarium without fear. The injections, according to directions, were given per rectum, in doses beginning with 0.1 gramme (1½ grains) and increasing up to 2½ grammes (38 grains). Seven patients received this treatment for periods varying from four or five weeks to four months. In all, greatly to his disappointment, were the results negative. There was doubtless improvement in some, but no more than had been frequently noticed by different methods. In one case, in which one lung had been affected for several months and in which there had been very marked improvement, a sudden, violent process appeared in the other lung after a month's use of antiphthisin, and the patient has since then gone slowly and steadily down hill. It may have been simply coincidence, and it probably was, but he could not help wondering if it would have happened had the remedy not been used. He had used it also for three months at the City Hospital, in a case of phthisis not far advanced, and doubtless there was improvement in the physical signs and the cough, but, again, no more than he had often seen after rest and good nursing. The temperature, usually high, was not affected, apparently, by the remedy.—*Boston Medical and Surgical Journal*, December 31, 1896.

Southern Surgical and Gynæcological Association.

Vaginal versus Abdominal Section for Pus in the Pelvis.—W. D. Haggard, Jr., of Nashville, described the transitional periods in the treatment of pus in the pelvis,—vaginal puncture superseded by abdominal section and removal of pyosalpinx, and removal of the uterus and its adnexa *per vaginam* by the French and through the abdomen by the American school. These operations had given way to modern vaginal section and evacuation and drainage of all pus-pockets. The abdominal route afforded visual inspection of the field. The attack on morbid masses could be made with safety to visceral integrity. If pus accumulations were multiple, rupture and peritoneal soiling were inevitable; that was the supreme disadvantage of abdominal incision. The author had often seen the pelvis deluged with pus with impunity. He had also seen patients die within twelve hours from fulminant sepsis from peritoneal contamination. He referred to a mortality of 18.5 per cent. in a series of collected cases of laparotomy for pus, done in five metropolitan hospitals in the last year, and asked what it must be in the "unheard-from precincts." The abdominal method offered

the best approach in tuberculous inflammation of the ovaries and tubes and in cases of small, unilateral pyosalpinx. The author referred to the advantages of exploring the pelvis for retro-uterine tumors and the adnexa by vaginal section.

The situation of pus in the pelvis in most cases made vaginal incision extraperitoneal,—a minor procedure giving major results. There was no shock, there was no risk, nor was there disturbance in convalescence. In prolonged sepsis from large abscesses, posterior section and drainage were life-saving procedures. The special indications were : 1. Early cases of acute suppurating salpingitis. 2. Incipient post-puerperal peritonitis. 3. Large pyosalpinx and true pelvic abscess. The first group included early gonorrhœal and abortion cases. In puerperal cases incipient peritonitis and puddles of pus in Douglas's space imperatively demanded incision. Should simple pus-letting in any of these cases not effect a cure, a subsequent operation for the removal of relics of previous ravages could be done without the dangers incurred in the presence of pus. The field of vaginal section was to prevent suppuration in early cases, to anticipate it in puerperal cases, and to save life in desperate cases. Its application to the pelvic inflammatory processes and to pus in the pelvis was one of the greatest surgical triumphs of the age.

Joseph Taber Johnson, of Washington, argued that, while the vaginal method had a great many points in its favor and was being resorted to more and more in cases of large pus collections in the pelvis, yet those who had been familiar for a considerable time with the abdominal route could operate more conveniently and dextrously by this method and with greater safety to the patient than by the vaginal. He could not agree with the speaker that the vaginal operation might be done without any risk to the patient. Sometimes in operating through the vagina for the purpose of removing the uterus and its adnexa, or for large pus collections high in the pelvis, where it was necessary to manipulate the parts a good deal and to do a thorough enucleation, the surgeon was likely to tear the intestine, the bladder, the ureter, or a large vessel which was out of sight. In such cases the abdominal was much safer than the vaginal route.

Charles P. Noble, of Philadelphia, did not feel that either the abdominal or the vaginal method possessed all the advantages, but, if restricted to one or the other, he should prefer the abdominal rather than the vaginal route. An objection formerly urged against the abdominal route was the large percentage of hernias which followed this method. Only a week since he had tabulated the operations he had done for four years, which had amounted to 397 abdominal cases, in which he had used the buried suture in closing the abdominal wound. Of this number the wounds had suppurated in 7 cases, while in 390 they had healed by primary union. Among the 7 patients in whom suppuration had occurred, 1 had had a hernia. There had been a large umbilical hernia in 1 of the 390 cases. Aside from these 2 cases, he had not had any hernias in his operative work for the last four years where the buried suture had been used. If the patient were in a condition to permit the surgeon to do ideal work, he

thought the question of hernia was such an insignificant one that it might be left out of consideration.

HOWARD A. KELLY, of Baltimore, said that, whenever possible, pus in the pelvis should be treated by vaginal puncture or section posterior to the cervix, without sacrificing any of the uterine appendages. A large percentage of the patients thus treated would have no further discomforts. Illustrative cases were cited. One of the principal arguments advanced by advocates of the vaginal route in removing the uterus, the tubes, and the ovaries was the excellent drainage that could be secured by this method. In Dr. Kelly's opinion it was unnecessary to take out the uterus to get drainage.

L. S. MCMURTRY, of Louisville, thought that a deep impression had been made upon the profession in the last two years by the vaginal method of operating for pus in the pelvis. This procedure, however, was by no means a new one. Battey, in his original operations upon the ovaries, had attacked the pelvic organs through the vault of the vagina. The method of attacking accumulations of pus in the pelvis by vaginal puncture and drainage had been the universal practice of abdominal surgeons for a long time. The sacrifice of the uterus, in the majority of cases of suppurative pelvic inflammation, was unnecessary. Surgery should be confined within the limits of removing only such diseased tissue or organs as it was necessary to remove for the complete cure and restoration of the patient.

J. WESLEY BOVEE, of Washington, objected to anterior colpotomy in dealing with pus cases unless the accumulation of pus was on top and in front of the bladder. He thought that in these cases drainage through the anterior vaginal route could not be done, and the pus could not be reached in many cases. He believed it was not necessary to remove the uterus at the same time the tubes were taken out. He did not want to be understood as being opposed to the vaginal route in very urgent cases.

R. B. MAURY, of Memphis, had, during the last two years, thoroughly studied the subject of vaginal hysterectomy, as he had done quite a number of these operations without any mortality, any accident, or unpleasant result. But he would not undertake to say that we ought to substitute it for laparotomy. Both abdominal and vaginal hysterectomy were operative measures that surgeons must avail themselves of according to the circumstances of the case. Dr. Maury cited the histories of two patients that he had treated within the last thirty days, which beautifully illustrated the advantages of the two methods.

W. E. B. DAVIS, of Birmingham, Ala., said the practice of incising pelvic abscesses was so old that it hardly required discussion, but the method of attacking pyosalpinx by vaginal section was comparatively recent. Unquestionably vaginal incision for pus confined to the tubes and ovaries would save these important organs in a good proportion of cases. In all cases of large pus collections in the pelvis nothing should be done more than to incise the abscess and drain, and then, later on, the surgeon should be prepared to do an abdominal section, if necessary, but he thought the surgeon would rarely have occasion to do this. Total ablation of the

uterus and its adnexa was unnecessary in many of the instances in which it was practiced by some surgeons.

Cholelithiasis.—A paper on this subject was contributed by A. M. Cartledge, of Louisville, in which the author reported several interesting cases. He dwelt upon cholecystostomy and cholecystenterostomy, pointing out the indications for each operation. He considered cholecystostomy the only operation that was applicable in the cases cited. In his opinion there were no cases that primarily demanded cholecystenterostomy.

James McFadden Gaston, of Atlanta, agreed with the speaker that, in ordinary cases of gall-stones in the gall-bladder, with obstruction of the cystic duct, the simplest procedure was to lay open the abdominal wall, attach the gall-bladder to the incision, and remove the gall-stones. But in a large proportion of cases of complete obstruction he doubted whether there would be restoration of the flow of bile through the cystic duct into the gall-bladder. With reference to the comparative value of cholecystostomy and cholecystenterostomy, the two operations were applicable to entirely different conditions. No one would operate and expect benefit from a cholecystostomy except to establish drainage for the bile in a case of permanent occlusion of the common duct, and this was the only condition in which the advocates of cholecystenterostomy had ever alleged anything for it.

John D. S. Davis, of Birmingham, Ala., emphasized the point that patients frequently had gall-stones without the manifestation of symptoms, particularly the symptom jaundice. He did not believe that it was ever wise to resort to cholecystenterostomy as a primary procedure. The surgeon should first resort to drainage, and then, if relaxation did not take place and the flow of bile was not effected, cholecystenterostomy should be done.

George Ben Johnston, of Richmond, Va., spoke of the diagnosis of gall-stones. He was convinced that, if examinations of suspected cases of gall-stones were as careful and minute as they should be, surgeons would frequently find them. It had been his experience that enlargement of the gall-bladder did not always occur where a gall-stone existed, but that a condition which simulated enlargement of the gall-bladder frequently did exist, this condition being due to the presence of numerous dense adhesions found in the neighborhood of the gall-bladder, gluing it to every tissue with which it came in contact. One thing which struck him as very singular in connection with the presence of gall-stones was that the size of the stone or stones seemed to make no difference in the production of symptoms. In regard to hæmorrhage, it was generally admitted that cases in which cholæmia was profound were the ones in which we were to expect hæmorrhage, and by no known method could this hæmorrhage be successfully controlled. The cholæmic condition seemed to invite a fatal hæmorrhage. The experience of operators in this field of surgery was that, when cholæmia was profound, hæmorrhage of a fatal character was to be expected. He considered cholecystostomy a proper procedure in all cases, except those where the obstruction was in the common duct and could not be relieved.

W. E. B. Davis said that surgery of the gall-bladder for the removal of gall-stones had given brilliant results, but there were still questions in regard to operative procedures on the ducts that were not, as yet, definitely settled. He did not believe the speaker referred to cholecystostomy as being the operation of choice in cases where the obstruction of the duct could not be removed, but he must have had in mind the procedure advocated by Murphy, of resorting to this operation in a case of gall-stone in the gall-bladder where there was no obstruction in the duct. Murphy had resorted to cholecystenterostomy instead of cholecystotomy, and he thought that Dr. Johnston did not intend to convey the idea that he would not do cholecystenterostomy where the obstruction in the duct could not be removed. Cholæmic cases were bad to operate in. Perhaps in not more than 5 or 6 per cent. of the cases was the obstruction found in the common duct. Some years ago the speaker had made experiments which conclusively showed that the surgeon could incise the duct and drain with gauze without peritonitis following. A paper on this subject had been read by him before the American Medical Association in 1892, since which time he had done further experimental work in which sutures had not been used after the stone had been removed from the duct, and, while several of the patients had very nearly died from profound cholæmia, and eventually did die, yet in the cases in which this method had been resorted to the abdominal cavity had been walled off and peritonitis had not resulted.

George A. Baxter, of Chattanooga, directed attention to the frequency of gall stones unattended with the ordinary symptom of colic, and cited an illustrative case in which there had been found post-mortem three large stones in the gall-bladder.

F. W. McCrae, of Atlanta, reported a case in which there had been repeated attacks of colic with profound cholæmia. An operation had been undertaken with the idea that the obstruction had been in the common duct, and that there had been stones in the gall-bladder. When the abdomen had been opened in the presence of several physicians the liver had been found to be much enlarged and reaching almost to the umbilicus. Instead of finding the gall-bladder enlarged, he had found a fibrous cord not larger than his index finger. The common duct, from disuse, had been reduced to a mere cord. A calculus had been found in the hepatic duct which extended up into the transverse fissure of the liver. He had not known what to do in this case, and, after consultation with his colleagues, he had closed the abdomen. The patient had died five days later from exhaustion. If anything could be done for such patients he would like to know it.

Mental Complications Following Surgical Operations.—John T. Wilson, of Sherman, Texas, thought that it was a strange fact that, while surgical operations would sometimes cause serious mental disturbance, on the other hand, those same operations would sometimes cure it; especially was this the case with some melancholiacs. Many women who labored under attacks of melancholia caused by some disease of the genital apparatus had been cured when relieved of the physical defect by operation; others had been

much improved, and yet some had received no benefit. The question might very properly be asked: Why should a surgical operation produce an attack of insanity. This could no more be answered in every case satisfactorily than the question of why some persons became insane from the many other causes to which it was attributed, for in most cases the mental complications were a surprise, and no good reason could be given why they should follow. In others, however, a logical explanation might be had. If the patient were a high-strung, nervous individual, easily excited, and unable to bear pain, the great and increasing dread of the anæsthetic, the operation, or both would so affect him that he would lose control of the will power and the explosion would come after the operation and reaction from the anæsthetic. In many of these cases, probably a majority, there was an hereditary taint or a strong neurotic tendency.

The author quoted Mairet, who thought that it was in those individuals who were predisposed by heredity or other grave causes,—alcoholism, infectious diseases, etc.,—that surgical operations gave rise to insanity. In the constituent elements of an operation which might act on the brain the two most important ones were the anæsthetic and the degree of surgical traumatism with its after-effects, of which disturbed nutrition played a very important part. When the predisposition also was considerable the anæsthetic alone might produce insanity, or it might result even after minor operations. It was, of course, necessary to take into consideration the mental state of the patient prior to the operation, especially in those graver cases where questions of life or death were frequently involved.

E. S. Lewis, of New Orleans, related the case of a woman, 40 years of age, who had been very hysterical, upon whom he had operated for laceration of the perineum. She had manifested no evidences of insanity prior to operative interference, but during her convalescence the hysterical manifestations had increased and had been associated with delusions. Her condition had become so serious that on different occasions she had threatened to commit suicide. She had been transferred to an insane-asylum, and after a thorough examination by the physician in charge an unfavorable prognosis had been given. Investigation of the family history had shown traces of insanity.

In another case, that of a woman 60 years of age, he had removed a very large adherent ovarian tumor, and the operation had been attended with considerable shock. For a few days subsequently the patient had done well, but then she had become perfectly insane. These were the only two cases he vividly remembered, although he had seen cases of temporary insanity after operations, which had passed off in the course of a few months.

W. E. Parker, of New Orleans, had seen two or three cases of insanity in men following surgical operations, but had never been able to trace any history of the disease in the family. The insanity had occurred in alcoholics. Two of the men had been addicted to either cocaine or morphine. In the management of such cases the use of the particular drug to which the patient was addicted should still be continued in very small doses, and

cut off gradually, for the reason that great prostration often followed the sudden interdiction of a habit that had been continued for many years.

R. B. Rhett, of Charleston, had met with three cases of post-operative mental aberration, two of which had occurred in old women after removal of the breast for cancer. The third case had occurred in a young woman who had had puerperal insanity prior to the operation. In two cases the insanity had lasted for three days, in the other for three weeks.

Cartledge said that the question of post-operative insanity led us to discriminate as to the probable etiology in many of the cases. He thought the author of the paper had had it in mind to deal with those cases of post-operative insanity that were functional in character, rather than those in which there was suffering from the mental impression produced by the operation in general. He was quite sure that most of the cases, except those characterized by hereditary tendencies and traits, could be traced to some organic lesions. The history of the case should always be thoroughly investigated. He had encountered what he considered pure post-operative insanity in only two cases.

John D. S. Davis considered the subject of interest from a medico-legal stand-point. No surgeon was absolutely free from such mental complications occurring in his operative work. He had encountered four cases. In a young man there had been no history of insanity, but an analysis of the urine had shown a great many casts and a slight trace of albumin before the operation. Operative interference had been followed by acute mania which had lasted seven days, then disappeared, and the patient had recovered. He expressed a desire that Dr. Wilson would, in closing, touch upon the responsibility of the surgeon in this class of cases.

Joseph Taber Johnson, said that in talking with Dr. Kelly and Dr. Noble he learned that the latter had met with eight cases of insanity following perineal operations. He asked Dr. Wilson to state whether operations upon the perineum were more frequently followed by insanity than others.

Wilson said he had seen a number of cases of various forms of insanity following surgical operations, but did not think the disease occurred more frequently after perineal operations and operations upon the genitalia than after those upon any other part of the body. In reply to Dr. Davis's question, he did not think the physician was any more responsible for the death of a patient from insanity following an operation than he was for death from any other cause following any operation. He had never heard of a suit for malpractice having been brought against a practitioner for the occurrence of mental derangement from a surgical operation.—*New York Medical Journal*, December 26, 1896.

Selections from Reports of Members of the Annual's Staff of Correspondents.

Denmark.

DR. F. LEVISON,
REFERENT FOR DEN DANSK LITTERATUR VEDRØRENDE: ALMINDELIG MEDICINSK PATHOLOGI OG THERAPI, DERI INDBEFATTET, NERVE- OG SINDSSYGDOMME, PÆDIATRIK, OBSTETRIK, GYNÆKOLOGI, HYGIEINE, DEMOGRAPHI, RETSMEDICIN, PATHOLOGISK, ANATOMI, BAKTERIOLOGI.

Alle medicinske Bøger, Disputatser, Monographier, Tidsskrifter etc., der adkomme i Danmark bedes sendt til
DR. LEVISON,
Nørrevoldgade, 13,
København.

Pathology of Empyema.—CH. ULRICH describes a case of empyema caused by ulcus ventriculi perforans. A maid-servant, 35 years of age, who never suffered from cardialgia or vomiting, presented signs of a large effusion in the left pleura. As an explorative puncture had shown the presence of pus, a large amount of purulent fluid was evacuated, after resection of the seventh rib, in the angular line. She recovered, and after a month the secretion from the incision had almost ceased, when suddenly three epileptiform attacks, each continuing for five minutes, set in, when the patient collapsed and died.

At the autopsy a perforating ulcer was found on the anterior wall of the stomach. Between the stomach, the liver, the spleen, and the diaphragm a large abscess had formed, and from it a perforation through the diaphragm had given rise to the empyema. In the brain two abscesses were also found,—one on the left lobus frontalis, another on the right lobus occipitalis.—*Bibliothek for Läger*, p. 367, 1896.

Cervical Ulceration.—RASCH observed several cases of soft ulcers of the uterine neck which did not resemble the ordinary chancre, but consisted of grouped, confluent, yellow, papulous prominences, with a granulated surface. The ulcers healed promptly by applications of iodoform powder, while different other treatment had proved inefficacious.—*Hospitalstidende*, p. 661, 1896.

Treatment of Gout.—F. LEVISON considers that gouty affections are caused by an accumulation of uric acid in the blood, owing to insufficient excretion by the kidneys. Both by autopsies made by himself and by those described in the literature, it is proved that the kidneys of arthritic patients are almost always in a state of granular atrophy. This condition is caused either by hereditary disposition, by lead poisoning, or by continued irritation of a mechanical order, especially by the deposition of crystals of uric acid in the tubuli of the kidneys. By far the greater portion of arthritic patients have formerly suffered from uric-acid gravel, and are only later in life affected with gout. A rational and long-continued treatment of uric-acid gravel, which should not be merely limited to the treatment of the renal colic, but should be continued as long as the urine still deposits sand or even microscopical crystals of uric acid is, therefore, the best prophylactic of gout.

In the treatment of gout none of the new patent medicines, such as piperazine, have been of use, but in fifteen cases, of which the particulars are given, the author has successfully employed the dielectric method introduced by Edison in 1890, and further developed by Labatut, of Grenoble.

In this method the affected articulation or limb is placed in a 2-per-

cent. solution of chloride of lithine, made alkaline by some caustic lithine or carbonate of lithine, while another portion of the body (hand or foot) is placed in a weak solution of common salt. Two electrodes of coal are placed in the two solutions and the anode made to communicate with the solution of lithine and the cathode with the solution of salt. A current of 20 to 25 milliampères is employed for thirty minutes every day. Labatut has proved by ingenious experiments that lithine can thus be carried with the current through the skin into the body, and that it enters by the anode; after a treatment of some days lithine is found in the urine.

Of the 15 patients treated by Levison in this way, 11 sufferers from chronic gouty affections were greatly benefited; the function of the joints in particular was almost always quite restored or much improved, even if the stiffness and pain had existed for years. The author gives particulars of cases in which patients had been for years unable to make use of a knee or a hand, and were able, after a treatment of three to four weeks, to take long walks without any pain, or could use their hands for sewing, writing, or even playing the piano.—*Hospitalstidende*, p. 881, 1896.

Astigmatism.—O. RÉE has published a thesis on the examination of the eye by the aid of a luminous point, especially in the investigation of astigmatism; the author shows by various tables that the luminous point is seen differently by different modifications of astigmatic eyes.

Russia.

DR. J. DRZEWIECKI,

РЕДАКТОР-КОРРЕСПОНДЕНТ

изъ области русской литературы, касающейся: Общей медицины и терапіи, педіатріи, акушерства, гинекологіи, ларингологіи, отологіи, гигіены, демографіи, судебной медицины, гистологіи, бактеріологіи, анатоміи и физіологіи.

Всѣ періодическія, медицинскія изданія, сочиненія, стат'и, монографіи и т. д., изданныя на русскомъ языкѣ и касающіяся вышеименованныхъ предметовъ должны быть адресованы на имя

Дра Дрзевецкаго.

87 Краковское Предмѣст'е,

Варшава.

Salts of Potassium in Heart Disease.—KRIVONOGOFF administered nitrate of potassium in single doses of 10 grains (0.67 gramme), six times in twenty-four hours, to patients with heart affections, especially where compensation was defective. The favorable action of this treatment manifested itself as follows: The contractions of the heart were stronger; this was made evident by the strengthened heart-beats and by the increased wave of the pulse and arterial pressure. A frequent pulse became slow under the influence of nitrate of potassium; the daily quantity of urine was markedly increased, which the author ascribes to the increased blood-pressure. Œdema, hydrothorax, ascites, etc., disappeared, and the weight of the body was reduced. One of the first symptoms of the action of the salts of potassium was an evident diminution of the dyspnœa and amelioration of sleep and the general condition. Sometimes the salts had a purgative effect which afterward disappeared of itself. In the fifteen cases observed the author had never seen, even during long-continued use of this remedy, any cumulative action or any secondary unfavorable symptoms.

This would suggest that preference should be given to nitrate of potassium rather than to digitalis or convallaria.—*Inaugural Dissertation*, St. Petersburg, 1896.

The Role of Bed-bugs in the Etiology of Typhus Recurrens.—TIKTIN, considering the fact that, during the epidemic in Odessa, the disease was located mostly in dirty and crowded boarding-houses, full of fleas, lice, and bugs, desired to have some specimens of these parasites sent him. He received only lice, no fleas or bugs having been sent. He was not able to detect spirochetes in the lice. He then made the following experiment: He put some bed-bugs with spirochetes and starved them for several days, after which, with the consent of the patient, put the bugs upon his skin, under a small glass bell, during an attack of relapsing typhus. He did the same with monkeys infected with the disease. When the insects were satiated with blood and fell off, he crushed them between two glass slides, and examined the fresh preparations, after slightly staining them with gentian-violet. The blood of the bugs contained many spirochetes, which retained their form after eighteen hours, but did not move.

The author also allowed some of the starved bugs to suck the blood upon a shaven spot on a monkey (*Cynopithecus æthiops*) infected with the disease, then crushed them, and, having collected the blood from eight bugs, injected it under the skin of a healthy monkey. Sixty-four hours later spirillæ were found in the blood of the latter. The disease lasted about six hours, and before the rising of the temperature to 40° C. (104° F.) the spirillæ disappeared from the blood, after which it fell quickly to 36.3° C. (97.6° F.). The author supposes that, among many other agents, bugs also play a rôle in transferring the disease among men. He explains this as follows: Either bugs not quite satiated with the blood of the patient go to healthy persons and, biting them, introduce into the wounded skin the spirillæ which remained on the wound or in the cavity of the mouth, or the bugs satiated with the blood of the patient are crushed on the skin of a healthy person, who, feeling the creeping insects, scratches the place and inoculates himself with their blood.—*Meditzinskoye Obozrenye*, No. 21, 1896.

Sweden.

DR. F. EKLUND,
Brefväxlande Medarbetare
för den
SVENSK MEDICINSK
LITTERATUR.

Af alla i Sverge utkommande medicinska tidskrifter, böcker, afhandlingar, monographier a. s. v. torde ett exemplar benäget öfversändas till

DR. ABRAHAM
FREDRIK EKLUND,
Sibyllegatan, 3 A,
Stockholm.

A Case of Chondritis Costalis Septica.—A case of this affection is reported from the technical clinic of the Hospital of the Seraphim in Stockholm, by ULRIC M. ASPEGREN. The patient, a joiner 27 years of age, noticed, a month previously, a tumor of the size of a nut, which was neither painful nor sensitive on palpation. It was situated on a level with the third right costal cartilage, quite near the sternum, was not movable, but grown to the bone. Vigorous contractions of the great pectoral muscles caused a little pain. The author found abreast of the insertion of the third right costal cartilage and extending in the direction of the

same rib, an oval, roundish tumor, respectively nine and seven centimetres in diameter. Apparently the tumor was adherent to and passed insensibly into the cartilage of the third (possibly even of the fourth) rib, as well as into the right side of the sternum. The surface of the tumor seemed to be pretty smooth, its consistency was hard and somewhat elastic. In the centre it was softer, almost fluctuating. An incision ten centimetres long was made along the third costal cartilage. On cutting the great pectoral muscle its undermost fascicles appeared considerably infiltrated. As the operator endeavored to dissect them free from the tumor, a small cavity was opened from which some ichorous pus ran out. This cavity, which also contained some masses of granulations, was curetted. Thereupon the third costal cartilage was dissected free throughout its entire length. About one centimetre from its sternal border, on the inferior edge of the cartilage, there was an excavation of the size of a pea, filled up with a soft mass. Resection of the costal cartilage from its sternal border as far as 0.5 centimetre into the osseous part of the rib was then performed and recovery followed. The author considers the bacteria in question as belonging to the bacterium coli commune, although it did not produce coagulation of milk nor indol. This case is the first in which the bacterium coli commune has been clinically discovered as engendering suppuration in the osseo-cartilaginous system, although experimentally this result has been produced. —*Hygiea*, vol. lviii, No. 9, pp. 235 to 245.

Concerning the Association Centres.—At the First Northern Congress for Internal Diseases HAROLD HOLM exhibited a table which gave a general synopsis of the microscopical changes observed in sixty-nine brains of insane individuals, representing most of the forms of mental disease. The pathologico-anatomical alterations indicated only partially agree with the views of Flechsig. The places of predilection for the anatomical alterations are the gyrus rectus, the gyrus fornicatus (which does not belong to the association centres of Flechsig), as well as the island of Reil. Here the cortical substance of the brain may be entirely destroyed on both sides without there having been any aphasia or paraphasia observed. Where there are symptoms of aphasia with destruction in the region of the island of Reil, the cause must be looked for in the interruption of tracts which have their course therein, without any connection with the insular cortex. With regard to frequency of destruction of other parts of the brain-cortex, the frontal gyri and the temporal lobe come next in order, while the parietal lobe, the central gyri, and the occipital lobe come last.

The results of these investigations speak manifestly for the opinion that the origin of the psychoses lies in the destruction of the fibres having a transverse course, though the various parts of these may have a greater or lesser importance as to the psychosis, and their degeneration may engender the different forms of mental disease, according to their localization.—*Hygiea*, vol. lviii, No. 9, pp. 303, 304.

On the Serum Diagnosis of Typhoid Fever.—In a communication made to the medical clinic of the Hospital of the Seraphim, in Stockholm, JUNDELL

stated that he had tried the serum diagnosis in thirty-two cases of ileotyphus, with positive results in all of the cases with the exception of one, which was examined on the second day of the disease and then gave a negative result (although positive on the ninth day of the disease). In all the others the reaction followed the author's first experience. Three times he obtained the reaction on the fifth day of the disease. He considers the easily practical serum reaction in ileo typhus as much more trustworthy than all the other and more wearisome procedures for the detection of the bacillus of Eberth.

Judging from the examinations made up to the present time the serum reaction is absolutely pathognomonic, in the author's opinion.—*Hygiea*, vol. lviii, No. 10, pp. 359 to 370.

On the Accidental Blowing Sounds Over the Heart.—At the First Northern Congress for Internal Diseases, in Göthenburg (August 27 to 29, 1896), EDGREN stated that the sounds under consideration have the following characteristics: 1. They are most frequently met with in young persons. 2. Other signs of heart disease must be absent. 3. They have their maximum point at the left limit of the heart and at its apex. On the right they are most commonly observed at the auscultation-point over the aorta. 4. They are most frequently systolic, at times diastolic, but they occupy only a part of the systole or diastole. 5. As a rule, they are soft, yet the blowing sound audible in the second intercostal space at the left sternal border is very often rough. 6. They are very variable; one day they are audible, another day not. They are modified by the position as well as by expiration and inspiration. During expiration they often disappear when the patient is standing and breathes profoundly. 7. Their area of extension is small. They are never audible in the back of the chest.—*Hygiea*, vol. lviii, No. 9, pp. 285, 286.

Kustner's Operation for Uterine Inversion.—W. NETZEL reports the case of a married woman, 31 years old, who had had one abortion and five spontaneous deliveries. As a result of the too-violent measures employed by the midwife for the expulsion of the placenta, violent pains and metrorrhagia were caused, with unconsciousness, fever, and mental aberration. Not only was the entire womb completely inverted, but the neck of the uterus also, save its posterior portion, where a low wall represented the vaginal portion. As repeated, persevering, and very energetic endeavors to re-invert the uterus during profound narcosis were unavailing, the author operated according to the directions of Küstner, the sole difference in his procedure being that the re-inverted uterus was drawn out and down through the excision in the posterior fornix. Recovery followed without the least reaction. This case proves that Küstner's method—at least, under otherwise favorable conditions—gives an especially good result.—*Hygiea*, vol. lviii, No. 5, pp. 451 to 455.

Clinical Notes and Therapeutic Suggestions.

The Diagnosis and Treatment of Lumbago.—F. H. Edgeworth, of Bristol, subdivides this disorder into three classes of cases,—those of rheumatic myalgia, rheumatic neuritis, and renal pain associated with hyperacidity of the urine,—and argues that, if the differential diagnosis be made, it is found that treatment is thereby much simplified and restoration to health more readily brought about.

The patients of the third class complain of a dull-aching pain in the lumbar region on both sides. The pain, which is constant and not made worse by movement, is not confined to the lumbar region; it extends forward around the trunk into the groins, and occasionally into the testes. The patient generally complains of scalding during micturition, and the urine, which is quite clear on first being passed, is very acid in reaction, and on cooling deposits abundant brick-red urates. The muscles are not tender on palpation or percussion, but there is often a zone of hyperæsthesia of the skin, best tested by prodding with the head of a pin, extending around from the lumbar region to the lower part of the trunk for a space of about three inches above Poupart's ligament and the pubes. The pain is evidently associated with and probably dependent on an hyperacidity of the urine; just as scalding occurs during micturition from irritation of the urethra, so the bilateral lumbar and abdominal pains result from irritation of the renal pelves; and the hyperæsthesia of the skin is a "referred" phenomenon exactly like that which happens in cases of renal calculus or gravel. The reflex retraction of the testis sometimes seen in renal calculus is not present in these cases, probably because the irritation is not sufficiently great; and the phenomena are always bilateral, though they may be more marked on one side than the other. Treatment is simple and most successful, consisting in the administration of large doses of some indirect antacid, such as potassium citrate.

Lumbago due to rheumatic myalgia is characterized by pain in the lumbar region only, generally on both sides, though occasionally on one side only. It very rarely extends to the muscles of the anterior abdominal wall. When the patient is at rest or lying down, there is no pain, which occurs only during movement. An easy way of satisfying one's self as to this is to ask the patient to stoop down and touch his toes; the action is performed carefully and stiffly, with evident discomfort, often much greater while resuming the upright position than in stooping. The muscles are not, in the least, tender on palpation, and there is no hyperæsthesia of the skin either over the affected muscles or on the front wall of the abdomen. The urine is normal, and there is no scalding during micturition.

Lumbago from rheumatic neuritis resembles rheumatic myalgia in many of its features, but differs in three particulars. The pain, although rendered worse by movement, persists in a less degree during rest. Further, there is some tenderness on palpation, particularly over the spots where the nerves run through fasciæ. And, lastly, pain is often felt along the course of the sciatic nerve or nerves as well as in the lumbar region. If a case be seen early there is rarely any evidence of impairment in the conductivity of the nerves.

The treatment of lumbago due to rheumatic myalgia or neuritis consists in the administration of salicylates until toxic effects are produced, and in the use of counter-irritation, the best application for which is capsicum, which was recommended many years ago, but has been but little used. The ordinary B. P. tincture is diluted with water in the proportion of 1 to 5, and applied on lint, covered by oiled silk or other protective to prevent evaporation. The effects of this are extraordinary and quite inexplicable,—a patient, who a quarter of an hour previously could not make the least movement by reason of the pain, is able to move freely and painlessly. This result is, it is true, somewhat transitory; it wears off in an hour or so, but can be re-induced by a fresh application. One usually directs this to be done for half an hour four or five times a day.

I have found that the salicylates act more speedily in cases of rheumatic neuritis than of rheumatic myalgia; in the former the pain usually ceases as soon as salicylism is produced, while this has to be kept up for some little time in cases of myalgia before its cessation.

These cases of rheumatic neuritis and myalgia have some etiological relationships with ordinary rheumatic arthritis. It is easy to divide cases of "rheumatism" into two great groups, in the first of which are such affections as endocarditis, pericarditis, nodules, chorea, and arthritis, and in the second rheumatic myalgia and neuritis. Many authors assign them to different causes. And certainly such a division seems somewhat justifiable from a clinical point of view; as a rule, a patient suffers from one or more of the diseases of one group only. But such a division is a little arbitrary; if, for instance, a large number of cases of lumbago be taken, and those in which the pain is renal in origin be first subtracted, a large percentage of the remainder will be found to have suffered at one time or another from "major" rheumatic attacks.

The relationship, then, of these "minor" rheumatic affections is, perhaps, a good deal nearer that of ordinary rheumatism than is generally supposed, and affords an explanation of the good effects produced by the administration of salicylates.—*British Medico-Chirurgical Journal*, December, 1896.

A Study of the Biology of the Gonococcus (Neisser), with Contributions to the Technique.—In a paper on the above subject, based on the morphological and biological examination of exudates in cases of chronic urethritis, Henry Heiman, of New York, submits the following propositions as a summary of his experiments:—

1. He believes that, in the examination of secretions from urethritis, the employment of the centrifuge not only is the most convenient method, but also gives the best and most reliable results.

2. The medium employed by Hammer, consisting of albuminous urine plus glycerin agar, does not give so good results as chest-serum agar, as far as his experiments have shown.

3. Fractional sterilization of serum should be continued longer than six days, and, after an interval of two or three days, it should be sterilized again on three consecutive days.

4. He recommends fermentation-broth plus liquid chest-serum, Dunham's peptone solution plus liquid chest-serum, and nutrient broth plus liquid chest-serum as liquid media for the gonococcus.

5. In the fermentation-broth plus liquid chest-serum he was able to cultivate the gonococcus after fifty-one days, at which time he discontinued his experiments.

6. Gonorrhœal pus submitted to the centrifuge and kept moist at room-temperature contained living gonococci after forty-eight hours, as proven by culture.

7. In gonorrhœal pus which had been smeared on linen the gonococcus was demonstrated morphologically by Gram's method after forty-nine days in cover-glass, at which time his experiments were discontinued.

8. The gonococcus was demonstrated after twenty-nine days in cover-glass preparation made from pus which had been dried on glass.

9. In chronic urethritis culture-media alone are to be recommended for the detection of the gonococcus.

10. In 34 examinations of gonorrhœal threads with cover-glass alone, by Gram's method, 7 cases showed the gonococcus.

11. Of 61 cases of gonorrhœal threads examined with cover-glass and culture-media 13 gave positive results with cover-glass and 14 with culture-media.

12. For the collection of the secretions and threads for planting at least two specimens of urine must be obtained: first, that which washes out the urethra; second, that which contains threads of the posterior urethra and secretion expressed from the prostate.

13. He believes that a urethra may contain gonococci which lie dormant and may be innocuous in that person for years, but which may at any time excite an acute gonorrhœa in another person.—*New York Medical Record*, December 19, 1896.

A Plea for a Less Restricted Diet in Typhoid Fever.—In a clinical lecture on this subject A. G. Barrs, of Leeds, England, expressed the opinion that there is, in the treatment of typhoid fever, too great a tendency to treat the intestinal lesion at the expense of the individual, or, if not that, to make the temperature-chart the sole arbiter of our practice.

We should, he thinks, enforce no further departure from the normal diet of health than the disease itself enforces by the inevitable loss of appetite and impaired digestion of the pyrexial state. When a patient suffering from typhoid fever expresses a genuine desire for solid food, and his expressed desire is confirmed by his physical condition, he gives him such food as he can take, especially meat. He does not suggest, much less insist, that a patient with a dry, baked mouth, semidelirious, and probably loathing even milk, should be fed upon beefsteaks. Such a proceeding would, in his opinion, be as ridiculous and unjustifiable as to insist that a man who, with a clear mind and a full appreciation of his condition, says he is craving for solid food should be refused it.

Beyond the fact that it involves the least departure from the normal line of health, the author urges that it is a method which is likely to modify

favorably the death-rate of typhoid fever, to shorten convalescence, to diminish the risks of complications and sequelæ, and generally to make typhoid fever a less formidable and more manageable disease than it is under our present standard methods of treatment.

Perforation is, to his mind, by far the most important point with which he has to deal with, and he concedes that if solid food can, with reasonable certainty, be blamed for a single case of perforation, it would be quite unjustifiable to give it. Perforation, however, is not a common accident. Under orthodox methods of dieting it occurs in from 2 to 3 per cent. of all cases. For instance, in the hospitals under the management of the Metropolitan Asylums Board in 1894, in 534 cases 96 died, and, of these, 17 were cases of perforation; so that it is not a common cause of death. It appears to him that perforation may come about in one of two or three ways:—

1. By a direct extension of the typhoid process to and through the peritoneal coat of the intestine.

2. By undue stretching of the intestine when the peritoneal coat has been exposed by the separation of the slough. This is usually brought about by flatulent distension (we all very properly regard a distended abdomen as dangerous).

3. By violent peristalsis, such as that induced by purgatives or foreign bodies in an intestine in which the peritoneum only forms the floor of the ulcer.

In his opinion the majority of cases are due to the direct effects of the typhoid process, and are not accidental in the strict sense of the term, and are unavoidable by any form of dieting unless it be by liberal feeding in order to maintain the resisting-powers of the individual at the highest level possible under the circumstances. He thinks too much has been made of ulceration in typhoid fever. Ulceration, in the sense of a spreading molecular destruction of parts, there is very little save that which is necessary for the detachment of the slough, and, when the sloughing process has reached the peritoneal coat, the simple and natural process of separation will cause perforation. Tympanites and violent peristalsis are not more likely to occur under the method of feeding which he advocates than under strictly fluid diet. He believes that whatever food we put into the stomach, if it is digestible and the stomach is digesting, it will reach the seat of the typhoid lesion in the same state of fluidity, whether it be milk, beefsteak, bananas, or what not. If the stomach is not digesting, the patient will not be hungry, and, consequently, according to his rule, solid food will not be given to him. As is well known, milk is, at a certain stage of its digestion, just as much solid food as meat is, and sometimes it passes into the intestine and on to the typhoid lesion in its solid state; so that milk is not quite devoid of this supposed danger. He believes, also, that it will be generally admitted that a diet consisting of a normal proportion of wholesome solid food (meat and bread) is much less likely to give rise to an excess of intestinal gas than a diet consisting exclusively of fluids. Finally, he suggests that solid food alone cannot be a cause of perforation, or perforation would

not occur when the diet is so strictly regulated as it is.—*British Medical Journal*, January 16, 1897.

Puerperal Septicæmia and Antistreptococcic Serum.—An editorial writer alludes to the fact that the results obtained hitherto in the treatment of septicæmia by means of the antitoxic serum of Marmorek have been very much less marked than those which have followed the antitoxin of diphtheria, while its use in the treatment of puerperal fever has not been attended with brilliant success. He calls attention to the fact, however, that the serum has in some, and probably in many, instances been injected after the disease had become well-established in the system of the patient. In view of the very rapid absorption of the septic poison in these cases, and of the large uterine surface available for this purpose, the significance of such delay should not be overlooked. It is probable, too, that the disease under treatment has not always been the effect of the streptococcus alone, but primarily sapræmic and a consequence of putrefaction in retained coagula. It is, however, encouraging to note that, even in the treatment of puerperal cases, a distinct amelioration of symptoms after injection has been noticed by some French observers (Patru, Maillart, Ribemont, etc.). Boucheron speaks highly of his results in the treatment of purulent dacryocystitis by this method, injections of 5 cubic centimetres, repeated at intervals of a few days, having a marked effect even in chronic cases of this disease. He employs the serum also as a preventive of possible suppuration after cataract operations. As yet it would seem that the antitoxic power of this remedy is not great, and it may be that the secret of success in acute cases lies not only in the promptitude of its employment, but in the frequency of its repetition. The most that can be said so far is that past experience, though indecisive, is encouraging rather than otherwise, and lends some color to the hope that, with a purer and more powerful serum, better results may be expected. Practitioners who have had to combat the horrors of puerperal septicæmia are not likely to undervalue even such hope in this connection.—*The Lancet*, January 9, 1897.

Treatment of Warty Growths of the Genitals.—William S. Gottheil, in a paper on epithelioma of the penis, read before the Society for Medical Progress, November 14, 1896, concludes as follows:—

1. Warty growths of the genitals, more especially in the male, are always to be suspected of malignancy, no matter how innocent they seem.

2. They should either be left entirely alone or be thoroughly removed by knife or cautery.

3. Imperfect attempts at destruction, as with nitrate of silver, carbolic acid, etc., are especially to be avoided, there being many cases recorded in which they have apparently stimulated a benign growth into malignant action.—*International Journal of Surgery*, January, 1897.

Treatment of Wandering Spleen.—In a paper on this subject read before the Medical Society of London, J. Bland Sutton states that splenectomy for wandering spleen is not only justifiable, but it is a highly success-

ful operation, the rate of recovery being equal to that of ovariotomy in skilled hands. The author succeeded in collecting a score of cases performed within the last twenty years without a death. It has, of course, occurred to many that it would be desirable if it were possible to secure the spleen in the left hypochondrium by means similar to those adopted for movable kidney. Pouwer has endeavored to carry this out in two instances, but his results show clearly that the patients ran much greater risks and had a longer confinement to bed than if he had removed their spleens.

Rydygier has conceived and carried out, apparently with success, an ingenious and simple method which seems full of promise. The great difference between splenectomy and splenopexy is that, in the former case, the individual is deprived of an organ, and, although we do not know with any degree of precision what its real use is, we are, nevertheless, bound to display caution in dealing with it.

So far as his own cases go, he has failed to find any evil manifestations. He regards the spleen as a highly-developed and specialized lymph-gland, and at present there seems to be no reason for hesitating to remove it when "wandering" and troublesome, in so far as remote consequences are concerned, than in excising a crowd of enlarged glandulæ concatenatæ.

It is a fact that many, if not all, individuals with a wandering spleen are very thin and often gaunt, and, as far as his observations go, they retain this character when spleenless.—*British Medical Journal*, January 16, 1897.

Improvement in Diphtheria Antitoxin Serum.—Behring announces, in the *Fortschritte der Medicin*, that he has succeeded in improving the diphtheria serum so that any obnoxious influence will henceforth be entirely avoided. The undesirable symptoms sometimes observed, such as exanthems, swelling of the joints, albuminuria, etc., are, in his opinion, due partly to the diphtheric process itself and partly to accessory products which are present in the serum, pure antitoxin being a definite substance which only acts against the virus of diphtheria and otherwise has no influence on the organism. Behring has not been able either to remove these products from the serum or to prevent their formation; but the strength of the serum, reckoned in antitoxin units, has been increased so much that only a small quantity is required, and the unpleasant symptoms referred to are not now produced. This extra-potent serum is sold by the Hoechst factory as a dry preparation, which, before being administered, must be dissolved in water. It is very soluble, and may be kept for any length of time. It does not contain carbolic acid or any other antiseptic compound, but is simply preserved in hermetically-closed bottles. The strength of 1 gramme is 5000 normal units. Behring points out that the new antitoxin is especially valuable for immunizing purposes; the immunity obtained by its administration lasts about four weeks. He expresses the hope that the small number of medical men who are still opposed to the antitoxin treatment will now be persuaded of its efficacy and safety.—*The Lancet*, January 16, 1897.

Traumatic Hæmarthrosis of the Knee-joint.—John O'Connor, of Buenos Ayres, recommends that the following steps be taken in the treatment of this class of cases.

1. In cases of effusion into the knee-joint an aspirating needle should be introduced in order to arrive at a correct diagnosis.

2. If blood is present an incision should immediately be made into the synovial pouch, and every particle of blood and clot removed; in case of fracture into the joint, the fragments should be examined, and, if necessary, reduced and fixed.

3. A gauze drain should be inserted for a few days in order to make certain that no further re-accumulation shall take place; and, when it is evident that there is no further danger of this occurring, the external wound should be closed by "waiting" sutures.

4. When union is sufficiently firm active movement should be encouraged; and when this can be painlessly executed, then, and then only, is massage a most useful adjunct in restoring the muscles to their normal condition.—*Glasgow Medical Journal*, December, 1896.

Death Following Vaccination.—An editorial remarks that again and again inquiry has shown that the real cause of the death of an infant has not the remotest connection with a vaccination which has been performed at a date more or less approximate to the fatal illness. On the other hand, it is well to recognize that injuries are caused by vaccination, and that this operation, trivial as it may appear, should never be undertaken in a weakly subject or without every safeguard. A case was recently investigated by a coroner's jury at Southampton, where a child, 5 months of age, died on December 21st, after a brief illness, from what the medical evidence showed was septic poisoning. The infant had been vaccinated on December 9th, having six weeks previously suffered from bronchitis. There was no inflammation of the arm, but the site of vaccination became discolored, and the medical witness who made the post-mortem examination considered that this was the cause of the septicæmia. The editorial writer argues that there is very little evidence to support this theory, especially as there was proof of exposure to inhalation of sewer-air.—*The Lancet*, January 9, 1897.

The X-rays in the Detection of Renal and Vesical Calculi.—A. P. Laurie and John T. Leon, of London, conducted a series of experiments on museum specimens with a view to determining how far different calculi were opaque to the x-rays and comparing their opacity with flesh and bone. The result showed conclusively that calculi composed of oxalate or phosphate of lime were more opaque than bone, uric-acid calculi of almost the same opacity, and gall-stones very slightly more opaque than flesh. Mr. Henry Morris substantially confirmed these results, which seem to show that there should be no serious difficulty in photographing stone in the kidney or bladder.

After some inconclusive experiments on living subjects they inserted a uric-acid calculus of about five-eighth inch in diameter into the kidney of the cadaver of a man about 50 years of age. This was done with as little

disturbance of surrounding parts as possible. He used, to photograph the stone, a "focus" tube and an induction coil giving a six-inch spark with four storage cells connected to the primary circuit, and took the photograph on a "Lightning Cadett" plate. After an exposure of thirteen minutes with the body lying on its back the plate was removed and developed and showed a faint, but distinct, image of the stone, though the spine itself was very faintly indicated.

The next experiment on a living subject gave a negative result, which was subsequently confirmed by operation. The next case was that of a boy, aged 8 years, who came to the out-patient department of St. Mary's Hospital in November, 1896, with the symptoms of vesical calculus. On this occasion he used the same induction coil and the same number of cells and an xxxxx Faget plate, the exposure to the rays being seven minutes. The untouched negative showed that the calculus was apparently a little over an inch in diameter. A few days later lithotrity was performed by Mr. Silcock, a No. 9 lithotrite being used and the detritus weighing 98 grains. It was composed principally of uric acid and was oval in shape. Within a few days of the above case he had another, that of a boy, aged about 15 years, in whom a skiagraph showed the presence of a calculus in the bladder quite distinctly.—*The Lancet*, January 16, 1897.

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The Modern Treatment of Diphtheria in Private Practice. By W. A. Walker, M.D., New York. Reprint. 1896.

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The Effect of Permanganate of Potassium in Opium Poisoning. By Leedom Sharp, LL.B., M.D. Reprint. 1895.

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The Development of the Test-card. By Frederick K. Smith, Cleveland, O. Reprint. 1896.

Adenoid Vegetations in the Vault of the Pharynx. By Seth Scott Bishop, B.S., M.D., Chicago., Professor of Otology in the Chicago Post-Graduate Medical School and Hospital; Professor of Diseases of the Nose, Throat, and Ear in the Illinois Medical College, etc. 1896. Acute Suppurative Inflammation of the Middle Ear; Acute Suppurative Mastoiditis; Abscess of the Neck; Operation. By Seth Scott Bishop, M.D., D.C.L., Chicago. Reprint. 1896.

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A Case of Unusual Laryngeal Growth. By J. W. Gleitsmann, M.D., New York. Reprint. 1896.

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Rheumatismus Neonatorum. By R. Abrahams, M.D., District Physician to the Mount Sinai Hospital, New York. Reprint. 1896.

Pasteur Monument.

It has been decided to erect a monument to the memory of M. Pasteur in one of the squares of Paris. Statues or busts will also, no doubt, be located at his birth-place and in other cities. The Paris committee has, however, wisely determined that the statue obtained through international effort shall be located at Paris, where it will be seen by the greatest number of his countrymen and also by the greatest number of his admirers from other lands. The Paris committee has kindly extended the opportunity to the people of the United States to assist in this tribute of appreciation and love, and has authorized the organization of the Pasteur Monument Committee of the United States. The gentlemen named below have gladly accepted the privilege of organizing the subscription and of receiving and transmitting the funds which are raised :—

Dr. D. E. Salmon, Chairman, Chief of the Bureau of Animal Industry; Dr. E. A. de Schweinitz, Secretary, President of and representing the Chemical Society of Washington, Chief Chemist Biochemic Laboratory; Dr. G. Brown Goode (deceased), Assistant Secretary of the Smithsonian Institution; Dr. George M. Sternberg, Treasurer, Surgeon-General U. S. Army; Dr. J. Rufus Tryon, Surgeon-General U. S. Navy; Dr. Walter Wyman, Surgeon-General U. S. M.-H. S.; Prof. S. F. Emmons, U. S. Geological Survey, representing the Geological Society; Prof. Lester F. Ward, President of and representing the Anthropological Society of Washington; Dr. William B. French, representing the Medical Society of the District of Columbia; Hon. Gardiner G. Hubbard, President of and representing the National Geographical Society; Mr. C. L. Marlatt, Assistant Entomologist U. S. Department of Agriculture, representing the Entomological Society; Dr. Ch. Wardell Stiles, Zoologist U. S. Bureau of Animal Industry, representing the Biological Society of Washington.

The sum subscribed should be forwarded by money-order, check, or draft, made payable to "Treasurer Pasteur Monument Committee," and addressed to Dr. George M. Sternberg, Surgeon-General U. S. Army, Washington, D. C.

Up to January 15, 1897, the Paris Committee had received $50,000.

☞ *Any journals, exchanges, reprints, monographs, or books not sent directly to the editorial office, 28 rue de Madrid, Paris, will not receive attention either in the "Annual" or the "Universal Medical Journal."*

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CHARLES E. SAJOUS, M.D., EDITOR-IN-CHIEF,

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ASSOCIATE EDITORS.

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No. 28 RUE DE MADRID, PARIS, FRANCE.

"THE INCREASE OF THE NATURAL CAPACITY FOR RESISTANCE BY THE PRODUCTION OF HYPERLEUCOCYTOSIS."

From a paper published in the *Berliner klinische Wochenschrift*, by Dr. Martin Hahn, of the Hygienic Institute of the University of Munich, we extract the following:—

"The fact that leucocytes, where they occur in increased number, impart to the respective medium a greater bactericidal energy, suggests the thought that we may possibly augment by artificial process the natural resistance of the human organism, which, in the main, is identical with the bactericidal energy of the blood.

"Unambiguous results were obtained when the experiments on dogs were begun. They were given subcutaneous injections of remedies stimulating leucocytosis. For this purpose we commonly employ albuminoids, such as albumose or nuclein, the latter in the form of a yeast-nuclein solution, placed at our disposal by the firm of Parke, Davis & Co. We likewise obtained good service from a nucleinic acid, which was donated by the same firm. Since large quantities of such preparations can be administered to the dog, it is very easy to double the original number of the leucocytes in a short time. This is usually accompanied with a rise in temperature, the latter varying according to the remedy used.

"The defibrinated blood, obtained in the stage of hyperleucocytosis, exerted a decidedly more energetic bactericidal effect than the normal blood of the same animal. A favorable action is to be expected from hyperleucocytosis only in those cases where the bacteria do not remain localized and cause mischief by their toxins, but rather where they really pass into the circulation.

"In view of the results thus far obtained we may say, at least, it is highly probable that the bactericidal potency of the human blood depends substantially on the number of leucocytes, and that it will be possible to augment the natural resisting power of the human subject through artificial hyperleucocytosis. Accordingly, in these infectious processes due to the presence of bacteria in the blood, we have still left to us a field for immunization through attenuated cultures, and for cure through elevation of the natural powers of resistance. This cure is, prospectively, to be achieved through the artificial production of hyperleucocytosis."

NOTES ON THE TREATMENT OF FÆCAL FISTULÆ.

In a paper read before the New York State Medical Association Dr. by Frederick Holme Wiggin, in describing the technique employed, he laid much stress upon the thorough disinfection of the parts, including the interior of the bowel, with hydrozone, the closing of the intestinal opening, when possible, before the breaking up of the peritoneal adhesions, and the opening of the general cavity, the removal of any existing obstruction to the fæcal current, the disinfection of the bowel-surface with a solution of hydrozone, before and after the placing of the sutures, the control of oozing from the cicatricial tissue by the same means and the closure by a single row of silkworm-gut sutures without drainage of the abdominal wound after the washing of the peritoneal cavity with saline solution, some of which is allowed to remain.—*Medical Record.*

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GERMANY.

MEDICAL SOCIETY OF BERLIN.

Mechanical Intra-uterine Treatment.—SIMONS, who discussed this subject at the meeting of February 3d, includes under this heading the treatment by means of the sound and by uterine crayons, merely establishing a difference with regard to the greater action of the crayon. While assisting at Czempin's polyclinic Simons had occasion to apply the mechanical treatment to three groups of uterine maladies : (1) arrested evolution ; (2) atrophy ; (3) anteflexion, particularly of the neck. With regard to the first two groups, Simons is of the opinion that an organ as muscular as the uterus should, when it has become flabby, torpid, or atrophied, be restored to its original firmness by excitation by means of a foreign body. A veritable massage is to be exerted upon the uterus by means of the sound or of the crayon. On the other hand, the pains irradiating toward the sacrum and the thighs, as well as the nervous depression of the patient, should be combated. Arrested evolution of the uterus, which is so frequent in chlorotic subjects,—the cases in which the uterus has remained infantile,—come under this head. These conditions are incurable, but, when the uterus is not too small, treatment with the sound soothes the pain and the nervous troubles. The cases in which the uterus is completely developed at puberty, but remains comparatively small (aplastic uterus), may also be treated in this way. Amenorrhœa and dysmenorrhœa are favorably influenced, and the ovaries often attain their normal development. The sound is to be introduced 3 or 4 times during the week preceding menstruation. The uterus is drawn down with forceps, and after the introduction of the sound slight blows are given with the latter instrument.

Acute and subacute inflammations are counter-indications, but not the chronic forms of inflammation. The crayon should be 2 centimetres shorter than the uterine cavity, to prevent wounding the walls, but it must also not be too short, else it might be retained within the uterus. It may be left in place, even during menstruation, without the slightest danger, and is retained in position by a pessary which has been suggested by Czempin. The crayon is only to be used in women, never for young girls. It has a very favorable action, even when the trouble is considerable, in cases of pronounced anteflexion of the uterus and of the "tapiroid" neck.

Virchow desired to correct the nomenclature adopted by Simons. The "tapiroid" neck has nothing to do with flexion of the uterus. It is rather a question of a polypoid neoformation of the internal wall of the uterus, which projects from the cavity of the uterus on one side and is covered by the mucous membrane. It is a form of ectropion.

Landau called attention to the fact that gynæcologists have never ceased to use the sound in these and other appropriate cases, and that this instrument has given very good results in sterility. As for the generalized use of the crayon, even in chronic inflammations, he finds that the method is rather unscientific, and has never noticed any advantage from its use in atrophy of the uterus. On the contrary, the uterus grew larger, but at the same time there occurred various forms of perimetritis, parametritis, abscesses, and pyosalpingitis, and in some cases death resulted. Landau therefore considers it his duty to caution against the extensive use of intra-uterine treatment.

Czempin affirmed that the careful use of the sound or the crayon has never given rise to bad results in well-selected cases. In his opinion, chronic inflammations counter-indicate the use of this method. He finds the crayon very useful in dysmenorrhœa, when the uterus is not developed.

Falk questions how, since Simons does not admit that chronic inflammations are counter-indications, the crayons are to be kept aseptic for months in the uterine cavity.

Gottschalk does not make use of the crayon in atrophic conditions, but employs the electrolytic sound. He considers the crayon left in place during menstruation as very dangerous. In atrophy during lactation the condition is not a morbid one, but is merely physiological and disappears after nursing ceases.

Schoenhelmer does not believe that the utility of Simons's treatment has been demonstrated. The disappearance of the troubles is most frequently due to suggestion, which can be exerted by less dangerous means.

Simons affirmed that the dangers of the mechanical treatment only existed before the antiseptic epoch, and stated that he had never seen a case of peri- or para- metritis following the use of his method.

Two Cases of Cholesteatoma of the Encephalon.—Benda believes that the production of these tumors is of but little practical importance. They develop very slowly, and the symptoms are quite undetermined, and do not, in consequence, furnish any indications for the diagnosis.

In the two cases observed, the first symptoms noted date back fif-

teen or twenty years. Our knowledge of the affection is derived from a work published by Virchow in 1855, which probably referred to an epidermoid formation. This opinion has been frequently attacked, but has been confirmed by the researches of Benda, made according to the most recent methods. All the layers of the epidermis are present. The mode of development of the cholesteatoma, according to Virchow, bears a certain resemblance to that of the chancroid; its extension occurs through nodules of cells, which fact is confirmed by Benda's preparations. The starting-point of these tumors, in the opinion of a number of authors, consists of a metaplasia of the connective tissue. Benda supposes that this origin is attributed to the ventricular epithelium.

Diseases of the Bones in Workers on Mother-of-pearl.—Lewy presented a patient suffering from a very painful swelling of the lower half of the left humerus. The disease disappeared spontaneously, several days after the man stopped working. Gussenbauer thought that this affection was due to the mother-of-pearl dust inhaled.

GREAT BRITAIN.

Liverpool Medical Institution.

Serum Diagnosis of Typhoid Fever.—Delépine, of Manchester, emphasized the importance of using fresh cultures of the bacillus typhosus; he had noticed that old cultivations had of themselves a tendency to "clumping." To obtain such cultures the bacillus was grown on solid medium, and fluid cultures were made from day to day as required. It was important to avoid the slightest contamination; and he considered a magnifying-power of 300 diameters sufficient to observe the reaction.

H. E. Durham, of London, pointed out that experimentally the action of sera was not truly specific. In view of the positive reaction of bacillus enteritidis (Gärtner) with typhoid fever, it was possible that fallacious diagnosis may be arrived at in clinical cases. The action of serum of a typhoid patient in 5 per cent. dilution on B. enteritidis (Gärtner) was demonstrated. Blachstein's "artificial cholera serum"—chrysoidin—was also demonstrated in its action on cholera and several other vibrios.

Grunbaum emphasized the importance of dilution of the serum and recommended that it should be accurate. On account of the action of normal sera and those of other diseases, a time-limit is also necessary. He had also observed similar effects to those of the Canadian observers from the variability of virulence, but proper dilution obviated any confusion. The action of typhoid serum or other micro-organisms was interesting, but did not affect the diagnostic value. That the reaction should be present from the third day of the disease was in accordance with experiments on animals whose blood first showed an agglutinative action generally about the third day after the first inoculation. He had not come across any case of enteric fever in which the reaction was not present at some time. The method did not depend on the motility of the pathogenic organism, as was

shown by the agglutination of a diplococcus from a scarlet-fever case by serum from another scarlet-fever patient.

N. E. Roberts showed a hanging-drop specimen of typhoid-bacilli culture to which had been added the serum of a typhus patient four hours previously (dilution, 1 in 20). The bacilli were motile and showed no "clumping." In contrast with serum from an enteric case, the bacilli ceased their gliding and darting movements in a few minutes, and "clumping" was marked in half an hour. Durham did not seem to attach so much importance to the cessation of movements of translation, and asked what was the meaning of this reaction—was it associated with immunity? Out of 1300 cases of typhoid seen as Physician to the City Hospital, relapses occurred in 4 per cent.

Boyce said no one would question the value of the test, and its simplicity made it incumbent on all to apply it.—*British Medical Journal*, February 13, 1897.

West London Medico-Chirurgical Society.

Disorders Associated with the Menopause.—Amand Routh first dealt with organic lesions common at that period of life. He showed that the vulva was apt to become affected with local hyperæsthesia,—*e.g.*, pruritus pudendi, which was a symptom of many conditions. It might be due to a pure neurosis; to reflex cause, such as early carcinoma cervicis; to mucous polypus or prolapsed ovary; or to kraurosis, local rashes, dirt, parasites, vaginal or uterine discharges, irritating urine, as in cases of acidity, gout, or diabetes. Intrapelvic climacteric affections were next considered, and the influence of ovarian "internal secretion" discussed. The hæmorrhages of the menopause were enumerated, and the appropriate treatment mentioned. Functional pelvic and constitutional troubles were then considered, together with hints as to the management of such disorders. Tachycardia and flushings were described and their appropriate treatment added.

Charles Luke discussed the subject from the psychological aspect. He pointed out that the neuroses seen show many gradations from nervous irritability with effects on the character and temper to fully-developed insanity, which has a tendency in a large proportion of cases to melancholia, "a delusional insanity"; less frequently to mental weakness, and rarely to general paralysis. The change in the reproductive organs leads in some to a morbid querulousness, in others to a jealousy, either of which may seriously disturb domestic peace. Sexual excitement sometimes is developed which exceeds all control, depraved and vicious habits may show themselves, and dangerous accusations be made, which, although remarkably unpleasant may have unavoidable medico-legal interest. Drunkenness and the drug habit are specially noted at the climacteric. The treatment advocated was change of air and scene, removal from friends, together with attention to the bodily health. By these means many patients were restored to mental and physical vigor.

Harry Campbell observed that the nervousness of the climacteric is

not strictly synchronous with the menstrual irregularities of this epoch,—that a wave of nervous irritability comes over the woman before the commencement of the irregular menstruation, and lasts for some time after its disappearance. The same is true of puberty. He contended that practically every woman suffered from depression of spirits at the climacteric. He alluded to the frequency at this epoch of such morbid cephalic sensations as a sense of weight, burning, coldness, and irritation, especially in the region of the vertex, and to the common association with vertical headache of a sense of impending insanity. Tenderness of the scalp is very common at the climacteric. He referred to the frequency of post-climacteric monthly manifestations. He had observed them in over a hundred cases, and in one case had traced them to beyond 70 years of age. He was inclined to believe that the menstrual rhythm continued in all women to the end of life.

Mansell-Moullin said that Dr. Routh had dealt exhaustively with the local troubles of the vulva commonly met with at this period. One symptom to which Dr. Moullin drew attention was dyspareunia. Cases occurred where the introitis is small; the mucous membrane of the vulva has already acquired that smooth and glazed appearance characteristic of senility, and around the ostium vaginæ are certain red, well-defined circumscribed spots, extending forward and involving the meatus urinarius and the urethral canal. These are exquisitely tender and bathed in a muco-purulent discharge. This condition had been termed lupus minimus, which Dr. Moullin regarded as a misnomer.

Henry Sutherland remarked that he did not believe that the change of life *per se* had much influence in causing insanity at this period. His data were based on an investigation of one hundred cases of insanity at this epoch. The form of insanity was melancholia in 67 per cent.; mania, 24 per cent.; dementia, 4 per cent.; epileptic insanity, 3 per cent.; general paralysis, 2 per cent. The prognosis is usually favorable, 40 per cent. recovering. The duration of the attack varies from three months to three years, after which time the outlook is hopeless. Dr. Sutherland added some suggestions as to treatment.

McAdam Eccles alluded to two points of interest to the surgeon in connection with the menopause: 1. As to operations at this period. 2. As to whether the involution of the sexual organs had any effect on mammary cancer.

Forbes-Ross referred to the insanity occurring in the male sex at a period corresponding to the climacteric, and that some derangement of the abdominal organs was associated with the mental disorder.

McCann agreed with Dr. Harry Campbell as to the continuance of the menstrual phenomena after the blood-loss had ceased, as the discharge of blood may be looked upon as an accidental concomitant of menstruation, examples of so-called white menstruation being not uncommon. He pointed out that cases of early menopause might be confounded with a condition which he believed to be more frequent than was generally accepted,—viz., transitory superinvolution of the uterus, associated with

amenorrhœa and climacteric signs and symptoms. He described a case where a patient, aged 32, having nursed her child for eight months, had a period of complete amenorrhœa for fourteen months after the cessation of lactation. She complained of marked flushings and other disturbances commonly associated with the menopause. On vaginal examination the uterus was small, the cavity measuring two inches. There was contraction of the upper portion of the vagina (a well-known sign after the menopause). Six months later menstruation returned, together with increased size of the uterus, and the patient has continued to menstruate regularly. She was not anæmic. He had seen in addition two other cases closely resembling the one described.

Chapman advocated belladonna in the treatment of tachycardia at the menopause.

Routh, in reply, disagreed with Dr. Harry Campbell, and believed that the neuroses of the menopause were commoner in the upper classes. He was familiar with the painful granular areas of the vulva. In reply to Mr. Eccles, he believed that acute mania was more common after ovariotomy at the menopause than at other ages. Ovarian "internal secretion" was a very interesting subject. The cure of osteomalacia by oöphorectomy was explicable by the chemical changes produced in the blood, but the very recent recovery of recurrent mammary carcinoma after oöphorectomy was so far inexplicable. He had not seen any cases of temporary superinvolution described by Dr. McCann, and was much interested in his case.

Charles Luke said that Dr. Harry Campbell had added a very scientific explanation of the symptoms of "flushings." He disagreed with Dr. Sutherland's opinion, and thought that the climacteric was frequently associated with a mental "breakdown." He had seen acute mania develop after the removal of a mammary cancer at the climacteric. He thought that mental and nervous symptoms were more frequent in the upper classes. He agreed with Dr. Forbes-Ross in thinking that there were analogous mental disorders in the male corresponding to the climacteric in the female.

Edinburgh Medico-Chirurgical Society.

The Perigraph, a New Instrument for Clinical Mensuration.—Graham Brown demonstrated the perigraph,—an instrument which he had devised for the purpose of delineating the outline of the thorax and for clinical mensuration generally. It was more accurate and had a more general application than the cystometer at present in use; the principle was that of the ordinary pantagraph, but, to adapt it to the shape of the chest, the arm bearing the tracing-point was hinged and in place of being straight was in the form of a sickle. Tracings of the thorax, head, and other parts of the body made by this instrument were exhibited.

Dual Brain-action and its Relation to Certain Epileptic States.—Lewis C. Bruce referred to the ambiguous manner in which the term was employed to indicate different morbid psychical processes, some of which were really varieties of delusional insanity. For example, cases in which the patient

carried on a conversation with himself, replying to his own questions in the character of a second person, and, farther, those where the subject maintained that he was conscious of two distinct personalities, were not to be regarded as genuine instances of dual brain-action. On the contrary, the name should be limited to a morbid state in which there was evidence of independent and isolated action of the two halves of the brain. He had already recorded a very typical instance,—that of a patient who was at one time maniacal, spoke English and did not understand Welsh, was right-handed, and wrote mirror-fashion with the left hand; at another, was a dement, spoke Welsh only, though he understood English, and was left-handed, writing this time in the ordinary manner whichever hand he used. The memory did not extend from one state of consciousness to another. Such instances were exceedingly rare. Dr. Bruce then expressed his belief that some forms of epileptic automatism might be capable of explanation on the hypothesis of dual brain-action as defined above. A patient in the Edinburgh Royal Asylum was subject to three varieties of epileptic seizure, —petit mal, convulsions of the right side without abolition of consciousness, and typical grand mal. On one occasion, after an attack of the second of these, it was noted that the patient (who usually in the intervals between her fits displayed no such peculiarity) underwent a complete alteration of demeanor. Recognizing none of her attendants, obscene and abusive in manner, she became left-handed, and this state of matters, after lasting a few hours, passed off, leaving her without any recollection of what had occurred. His theory of the case was that the patient's brain had developed unequally; the left hemisphere might be regarded as fairly normal, but unstable and liable to the motor storm of epilepsy, while the right was undeveloped or atavistic. In most persons the left hemisphere was predominant, and here this was so, the altered personality being due to the temporary abrogation of its functions after the epileptic fit, and to the unguided action of the right hemisphere. Assuming this, and since the post-epileptic manifestation might quite well be considered one of epileptic automatism, it was justifiable to imagine that, in some cases at least, these automatic acts on the epileptic were to be regarded as due to the independent action of one central hemisphere of inferior or abnormal development. It was right to say, however, that he had examined many epileptics in Edinburgh and elsewhere, and had not been able, except in one other instance, to find distinct evidence of dual brain-action; the difficulty obviously being that it was only in the presence of definite motor symptoms that it was possible to decide in any given instance which side of the brain was active.

Cases of Gall-stone.—Rutherford Morison, of Newcastle-on-Tyne, emphasized (as Osler and he himself had previously done) the absence of pain as a prominent symptom in many of these cases. 1. A woman, aged 44, had suffered from jaundice for some months; pain had been present only at its onset; every time she rose she had a rigor, and jaundice increased. There was a history of previous recurrent attacks of colic. On physical examination the liver was found enlarged, but no sign of distension of the

gall-bladder could be made out; at the operation the common duct was found blocked by a stone, the gall-bladder empty, contracted, and with dense, thickened walls. 2. A woman, aged 49, had suffered up to thirteen months previously from spasms of abdominal pain, since then had lost flesh and noticed a tumor in the right side. On examination a movable tumor the size of a cocoa-nut was felt in the right hypochondrium, while at the operation a calculus was found blocking the cystic duct, and enormously distending the gall-bladder. In this case there had been no jaundice. 3. A woman, aged 50, had suffered for two years from attacks of abdominal pain. Jaundice had supervened, and was increasing rapidly, and a small tumor could be felt in the right hypochondrium. At the operation the gall-bladder was small and contracted, but there was a thin-walled diverticulum (the tumor felt), which contained a stone, as also did the common duct. An interesting comparison was drawn between the effects of complete and partial occlusion of the biliary passages on the gall-bladder, and those of analogous urethral obstruction on the urinary bladder. It was pointed out that in cases of obstruction of the common duct it was rare to meet with dilatation of the gall-bladder.

William Russell said that the paper had not removed a difficulty which was common in practice,—that of the differential diagnosis of such conditions as Dr. Morison had described, for cases of recurrent duodenal catarrh, duodenal cancer, and cancer of the head of the pancreas.

In reply, Dr. Morison stated that the absence of distension of the gall-bladder with jaundice was in favor of gall-stones; its presence of malignant disease.—*Medical Press and Circular*, February 10, 1897.

UNITED STATES.

Society of Alumni of Bellevue Hospital.

Antitoxic Serum in the Treatment of Diphtheria.—Hermann M. Biggs stated that the use of diphtheria antitoxin prepared in the laboratories of the Health Department of New York City began January 1, 1895. At first, however, the serum was limited in amount and unsatisfactory as to strength. Foreign antitoxin at this time was difficult to obtain and high in price, averaging from $8.00 to $12.00 a dose (or $0.80 for 100 antitoxin units, Behring's standard). The price now of antitoxin furnished by the health department is, for similar preparations, $0.75 to $1.50 (or $0.10 for 100 units).

Beginning first in the department hospitals, the health-board antitoxin was, as soon as a sufficient quantity was available, employed in any case of diphtheria throughout the city, being administered by inspectors without charge, on the request of the attending physician. During the period ending October 1, 1896, 1352 cases regarded as diphtheria were treated in their homes by inspectors of the department at the request of the attending physicians, and 1207 persons (excluding inmates of public institutions) who had been exposed to diphtheria were immunized by the

administration of antitoxin. More than 3000 injections of antitoxin were administered and about 6000 visits made. This duty was performed by the medical inspectors,—Dr. H. F. Koester, Dr. W. E. Studdiford, Dr. J. S. Ennis, Dr. L. K. Graves, and Dr. W. J. Pulley. These cases occurred, as a rule, among the very poorest classes in the tenement-house districts, in the most unfavorable surroundings, and were severe cases, often regarded by the physicians in attendance as hopeless, and usually came under observation late in the disease. Among the later cases, however, not infrequently comparatively mild cases of diphtheria were referred for treatment, physicians having seen the effects of antitoxin on the course of the disease. Up to April 1st about 8 per cent. of the cases treated were found moribund when first seen by the inspectors, while in the last six months the percentage was one-half of this. Practically no other treatment was employed besides the administration of antitoxin; in some few cases strychnine, whisky, etc., were also given. In many instances the attending physician discontinued his visits after referring the case to the health department, as the family were unable to pay for his visits.

There has been from the first a continuous and marked improvement in the results obtained, owing, it is believed, to the increased experience in the use of this agent, the earlier application of the remedy, the better preparation of the serum, and the larger dosage employed. While in the first year the mortality from diphtheria was 17.9 per cent., during the last six months it was only 11.1 per cent.

For the carrying out of the plan adopted the city was divided into districts under charge of inspectors, who are always on duty and liable to be called upon at all times during the day or night. The requests for the administration of antitoxin are received at the offices of the health department, and immediately referred by police telegram or by telephone to the inspector in charge of the district in which the case occurs. In some instances recently, when several cases have been treated for the same physician, they have been referred directly to the inspector to save time.

Up to October 1st, in all, 1352 cases regarded as diphtheria have been treated. Of these, 100 cases showed no Lœffler bacilli on bacteriological examination, were considered as false diphtheria, and excluded from the statistics; or were found to be true diphtheria later and were transferred to the Willard Parker Hospital; or the treatment was discontinued from some other cause. There remain 1252 cases, of which 1054 recovered and 198 died, the mortality being 15.8 per cent. Of the whole number, 856 were treated previous to April 1, 1896, and among these the mortality was 17.9 per cent; 396 were treated from April 1st to October 1st, and among these the mortality was 11.1 per cent. While the difference in mortality may in part be due to the season of the year, yet it does not satisfactorily account for the whole difference.

Of the 1252 patients 80 were moribund at the time of the first injection, or died within twenty-four hours after this. These may properly be excluded in a consideration of the utility of antitoxin in the treatment of diphtheria. There remain 1172 cases with 118 deaths, or a mortality of 10

per cent. Five hundred and seventy-four, or nearly half of the whole number, were reported by the inspectors to be in a bad condition and suffering from very severe or septic diphtheria at the time of the first injection; 268, or about 21 per cent., were reported as in good condition, or apparently affected with a mild form of the disease when first seen. In 355, or more than 28 per cent. of the whole number, the larynx, with or without the pharynx, tonsils, and nares, was involved. In 242 cases, in addition to the pharynx and tonsils, the nares were involved. One hundred and eight deaths occurred among the 355 laryngeal cases, giving a mortality of 30.4 per cent. Seventy-two of the laryngeal cases were intubated, and of these 29 died, or 40.2 per cent. In 283 laryngeal cases there was no operative interference, and in these the mortality was 27.9 per cent. Of the fatal laryngeal cases, in 38 the patients were moribund at the time of the first injection or died within twenty-four hours after it. If these are excluded, there remain 317 cases with 70 deaths, or a mortality of 22 per cent.

In the majority of cases (793) only one injection of antitoxin was administered; in 352 two injections were made, and in 108 three or more. In all severe cases the initial dose was large,—from 1500 to 3000 units,—experience showing that the best results were obtained from large initial doses, and the tendency has been constantly to increase the size of the dose. As a rule, the patients were seen the second time at the end of twenty-four hours, and where it was considered necessary a second injection was then administered. They were afterward seen at intervals until the disease had terminated either in complete convalescence or death.

The serum employed has been generally of high grade, and during the last nine months has been at least twice as strong as Behring's No. 3,—that is, it contained from 300 to 500 antitoxin units in each cubic centimetre. Better results have been obtained with the high-grade preparations and with larger doses. There has also been a considerable diminution in the frequency and severity with which rashes have occurred since the use of the high-grade preparations of antitoxin in which smaller doses of serum are employed. Joint pains were of very unusual occurrence. In some of the early cases where large immunizing doses were given, severe joint symptoms, accompanied by prostration, occurred, and in a number temporary albuminuria. No case has come under observation where death could be ascribed to the administration of the serum or where any permanent injury has been produced by it.

In all of the cases, with rare exceptions, in which the clinical features were unmistakable, the clinical diagnosis was confirmed by bacteriological examination. In a few cases the result of the bacteriological examination was indecisive, while the case was evidently diphtheria, and these have been included. In others bacteriological examination showed clearly that the case was false diphtheria, and these have been excluded. The usual practice has been, when the case was seen for the first time by the inspector, to administer an injection of antitoxin if it seemed clinically to be a case of diphtheria, and at the same time to make a culture from the throat for bacteriological examination. The course subsequently depended upon the result of the bacteriological examination.

Immunizing injections, varying from 50 to 500 units were administered to 1207 persons in families where there were children exposed to the disease; in 5 children laryngeal diphtheria developed within twenty-four hours after the injection, and in 7 others pharyngeal diphtheria appeared. All of these recovered on receiving further curative injections. In 9 children diphtheria developed within thirty days after the immunization. All of these cases but 2 were mild, and the patients recovered; in 1 scarlet fever appeared on the second day and the patient died, in another severe diphtheria appeared on the fifth day, and the patient recovered after antitoxin was administered. From the data at command it would seem that the protective influence of the immunizing injections cannot be depended upon to last longer than about four weeks, although in many cases the period is apparently longer. With the high-grade preparations of antitoxin now employed the amount of serum required for an immunizing injection is very small, from 3 to 10 or 15 minims (0.20 to 0.67 or 1 cubic centimetre), according to the age of the patient and the strength of the preparation; and since these small doses have been employed it has been unusual to see any disturbances (which sometimes ensued on the injection of large quantities of antitoxin) following the administration of an immunizing injection. Among the patients treated with injections in an infant-asylum were an infant 3 weeks old, born at full term, injected with 150 units, and weighing at the time of injection only four pounds three ounces, and another infant, premature, 19 days old, born at the seventh month, still in the incubator, injected with 150 units, weighing only three pounds eight ounces. These infants had no reaction and no rash. Several pregnant women, in the eighth and ninth months, were also injected without harm.

From October 1, 1895, arrangements were made to furnish free antitoxin to physicians for use among the poor, on condition that reports of the cases thus treated should be sent in to the health department. This free antitoxin could be obtained from the druggists acting as agents upon the statement of the physician that the patient was too poor to pay for it. Blanks were also furnished, upon which a history of the cases could be filled out by the attending physician. This arrangement has not been very generally known, and only recently has been much utilized by physicians, so that the complete report has not yet been obtained. Up to October 1, 1896, 409 such cases have been reported, of which 34, proved on bacteriological examination to be false diphtheria, were transferred to Willard Parker Hospital, or had histories too incomplete for proper tabulation and are therefore excluded; in the remaining 375, 307 patients recovered and 68 died,—a mortality of 18.1 per cent.

The following *résumé* of the statistics and reports on the antitoxin treatment of diphtheria has been collected from the reports published in the various medical journals of the continent of Europe, Great Britain, and the United States, beginning with the first extensive application of the new remedy in the early part of 1894 and bringing the subject up to October 1, 1896. In compiling these statistics, though the field has been carefully gone over, the collective investigations of Heubner, Monti, Eulenburg,

the Kaiserliches Gesundheitsamt, and others, and particularly Welch's admirable review of the subject, have been made use of.

The first report of experiments made with the blood-serum of immunized animals was communicated by Behring and Wernicke to the Seventh International Congress of Hygiene and Demography, in London, August, 1891. The earliest report of cases treated with antitoxin was in 1893,—30 cases treated by Behring in the Institute for Infectious Diseases in Berlin. In April, 1894, 233 cases of diphtheria, treated in the Berlin hospitals, with a mortality of 23 per cent., were reported by Ehrlich, Kossel, and Wassermann. About the same time Baginsky and Katz reported 163 cases, with a mortality of 12.9 per cent., treated in the Kaiser und Kaiserin Friedrich Kinderkrankenhaus in Berlin. But it remained for Roux to arouse the interest of the world in the discovery which Behring had announced three years before. Roux's masterly address, delivered at the Eighth International Congress of Hygiene and Demography of Budapest, September, 1894, in which he reported 300 cases of diphtheria treated with antitoxin in the Hôpital des enfants malades in Paris, really directed the attention of the whole medical profession to this subject, which has since become one of the most interesting in the history of medicine, and with this may be said to have begun the first extensive application of the new treatment of diphtheria.

In calling attention to the ways in which the value of the antitoxin treatment of diphtheria has been tested,—viz., by statistics and by clinical study of the course of the disease,—the various questions were discussed which might vitiate statistics of the kind, and it was shown how such fallacies might be avoided by comparing the mortality of a large series of cases treated by antitoxin with a similar series treated previously or simultaneously in other ways in widely separated places and over an extended period of time. Regarding the value of the evidence as to the efficacy of the remedy based on the clinical study, this, of course, depended on the confidence we placed in the opinions formed by the individual observers; but when the opinions expressed by many of the best clinical observers in all parts of the world were almost unanimously in favor of antitoxin, it would seem that there were no longer any reasonable grounds for refusing to accept the vote of the vast majority.

[A series of statistical tables was then presented illustrating the results of the antitoxin treatment up to the present time. The statistics contained all the larger series of cases which have been reported up to October 1st. No isolated cases were taken, only series of cases of ten and over. There had been no selection of cases and no reduplication so far as known, certainly none that could be avoided.

Table I showed the mortality of cases of diphtheria treated with antitoxin, and the previous or simultaneous percentage of mortality without antitoxin contained in 158 reports of cases in hospital and private practice. These cases included not only those of patients to whom in the early use of antitoxin were given insufficient doses, but also of those who were moribund at the time or died within twenty-four hours after the first injection.]

In 109 reports from hospitals there were 15,560 cases with 3009 deaths,

or a mortality of 19 per cent., with the antitoxin treatment; in 49 reports from private practice there were 9208 cases with 995 deaths, or a mortality of 10.1 per cent.; or, in a total of 24,768 cases there were 4004 deaths,—a mortality of 16 per cent., as against a previous or simultaneous mortality of 30 to 40 per cent. (taking the lowest figures in the reports) without antitoxin. It would appear, therefore, according to these reports, that there has been a reduction of mortality in diphtheria in both hospital and private practice of at least 50 per cent., as the result of the antitoxin treatment. The lower percentage of mortality in private practice is probably due to the fact that these cases usually come under treatment in an earlier stage of the disease, and are generally more favorable cases.

[Table II gave the mortality of cases of diphtheria treated *with* and *without* antitoxin (taking the reports which showed these data) at the same time, and in the periods immediately before and after the serum treatment.]

From 45 reports in which these cases were recorded there were 11,147 cases treated with antitoxin, resulting in 2166 deaths, or a mortality of 19 per cent.; while at the same time, or immediately before or after, there were treated 13,294 cases *without* antitoxin with 5026 deaths, or a mortality of 37.8 per cent. Of these, 7986 cases were treated in hospitals *with* antitoxin, with a mortality of 21 per cent., and 9039 cases treated *without* antitoxin, with a mortality of 36.4 per cent. Three thousand, one hundred, and sixty-one cases were treated in private practice *with* antitoxin, giving a mortality of 13 per cent., and 4255 cases treated *without* antitoxin, with a mortality of 40 per cent.

Thus put to the severest test, selecting the worst cases, as was often done for purposes of control and to prove the merits of the new remedy (though occasionally it was an unfortunate necessity, owing to lack of antitoxin, which compelled a forced interruption of the antitoxin treatment), there is still a difference of 50 per cent. in favor of the antitoxin treatment.

Table III gives the mortality of diphtheria in the Berlin and Paris hospitals for 1893, 1894, 1895, and the first half of 1896.

TABLE III.

	BERLIN HOSPITALS.			PARIS HOSPITALS.		
	Cases.	Deaths.	Percentage.	Cases.	Deaths.	Percentage.
1893	2,570	1,132	44.0	1,882	968	51.4
1894	2,890	801	27.6	2,355	837	35.5
1895	3,144	493	15.7	2,664	363	13 6
1896	1,100	151	13.6	1,298	199	15.3 (first half-year.)

From a comparison of the figures in the above table it appears that since the introduction of antitoxin into the hospitals of Berlin and Paris, according to the official reports, the mortality from diphtheria and croup has been reduced more than one-half.

It has been maintained by some that, in calculating the mortality from

diphtheria, not the percentage mortality, but the absolute mortality is the only fair criterion of the value of antitoxin.

Table IV shows the actual number of deaths from diphtheria and croup in Berlin, Paris, and New York since 1888, including the first half of 1896.

TABLE IV.

	CITY OF BERLIN.	CITY OF PARIS	CITY OF NEW YORK.
1889	1,284	1,890	2,291
1890	1,586	1,859	1,783
1891	1,078	1,531	1,970
1892	1,405	1,557	2,106
1893	1,643	1,266	2,558
1894	1,430	1,009	2,870
1895	996	440	1,976
1896	294 (first half-year.)	329 (first half-year.)	1,392 (first three-fourths of a year.)

From this table it would appear that in the cities of Berlin, Paris, and New York since antitoxin came into more general use the absolute mortality has been conspicuously reduced. In New York the absolute mortality figures do not show quite so well as in the cities of Berlin and Paris, as the antitoxin has not been as generally used in that city. But the percentage mortality shows a marked diminution in the death-rate. In 1894 there were in New York 9641 cases of diphtheria and croup reported, with a mortality of 29.7 per cent.; in 1895 there were 10,353 cases, with a mortality of 19.1 per cent., and in 1896 (first nine months) there were 8286 cases, with a mortality of 16.8 per cent.

H. Kossel shows also some striking statistics of a like character in refutation of the criticism made by Gottstein and others, that, in order to prove that the reduction of mortality attributed to antitoxin has actually taken place, it must be shown that there has been an *absolute* reduction of mortality at the same time that the number of cases of diphtheria has increased.

Table V shows the cases and absolute death-rate from diphtheria in the Berlin hospitals and in the city of Berlin.

TABLE V.

	BERLIN HOSPITALS.		BERLIN CITY.	
	Cases.	Deaths.	Cases.	Deaths.
1889	1,623	573	4,220	1,210
1890	1,792	695	4,586	1,601
1891	1,764	623	3,504	1,342
1892	2,074	837	3,683	1,637
1893	2,450	951	4,315	1,416
1894	2,890	801	5,220	1,321
1895	3,060	484	6,106	987

Taking the absolute death-rate from diphtheria and deaths to 100,000 in all the German cities of over 15,000 population, he gives the following:—

TABLE VI.

	Absolute Deaths.	Deaths to 100,000.	
1889	11,919	108	
1890	11,915	105	
1891	10,484	84	The average from 1886 to 1894 was 106.
1892	12,365	97	
1893	16,557	130	
1894	13,790	101	
1895	7,611	53	

These figures taken together would seem to prove conclusively that the absolute mortality from diphtheria has been reduced at the same time that the number of cases have increased; and they prove, moreover, that the epidemic of diphtheria, in Germany at least, instead of being on the decrease has been steadily on the increase for the last six or eight years up to 1894 and 1895, when there was a sudden and marked decline in the death-rate, corresponding to the use of antitoxin. That would, indeed, have been a strange coincidence of natural causes which reduced the mortality of diphtheria for the benefit of antitoxin, instead of the reduction of mortality being due to the effects of antitoxin.—*New York Medical Journal*, January 30, 1897.

Selections from Reports of Members of the Annual's Staff of Correspondents.

Poland.

DR. J. DRZEWIECKI,

Redaktor Korespondent z działu polskiej literatury tyczącej się: Medycyny ogólnej i lecznictwa; pediatryi; akuszerzyi; ginekologii; laryngologii; otologii; hygieny; demografii; medycyny sądowej; histologii; patologii; bakteryjologii; anatomii; fizjologii.

Wszystkie pisma lekarskie, dzieła, rosprawy, monografije, itd., w języku polskim wydane, a tyczące się przedmiotów powyższych, winny być nadsyłane pod adresem

DRA. DRZEWIECKIEGO,
87, Krakowskie Przedmieście,
Warszawa,
Królestwo Polskie.

Complete Prolapsus of Inverted Uterus in Pregnancy.—SAKS has described the third case of complete prolapsus of inverted uterus mentioned in the Polish literature,—one of the few described in general up to the present. The cause was increased abdominal pressure in a primipara and protracted delivery under conditions where no flabbiness of the uterine muscles could be suspected. An old woman, performing the office of midwife, advised the patient to strain herself very much, and at the same time exerted a strong pressure upon the abdomen with the hand, to cause the expulsion of the placenta. The author on being called in reduced the uterus with his hands; but the patient died thirty-six hours after delivery without any signs of infection. The author attributes the cause of death to shock.—*Gazeta Lekarska*, No. 48, 1896.

Remarks on Cancer of the Uterus.—SWITALSKI has studied this subject the last thirteen years in the clinic of Professor Jordan, at Cracow. Of the 9194 patients treated in the clinic, 363 (3.94 per cent.) were affected with cancer of the neck of the uterus. The majority of the patients (43 per cent.) were between 40 and 50 years old; in 31.3 per cent. the cancer developed after the menopause. In 6.3 per cent. there had been no births or abortions; the remainder had 1654 deliveries, making an average of six births per patient. The connection between numerous deliveries and cancer seems to be an active one, because they may induce complete changes in the mucous membrane of the uterus, while, on the other hand, it is proven that cancer mostly develops in places where there are erosions. The relative rarity of cancer of the uterus in Jewesses was noticeable at this clinic. (Vegetarians explain this by the abstinence from pork.—Cor. Ed.) The author ascribes it to the fact that Jewesses more readily consult a physician in cases of affections of the uterus, and, perhaps, to their rites regulating coitus. He calls attention to the importance of an early diagnosis, which is, however, not easy. Of the cases at the Cracow clinic barely 19.5 per cent. were suitable for radical operation, and only half of the patients—*i.e.*, 35—consented to this operation. Among these 35 the uterus was completely removed in 30; in 4 the vaginal portion was amputated by Braun's method, and in 1 only the posterior labium uteri was removed. Of the last 5 patients 3 suffered relapses; of the 2 others nothing is known.

Of the first 30 the uterus was excised *per vaginam* in 28; 1 was operated on by Rydygier-Freund's operation, and 1 by Rydygier-Herzfeld's method.

Of 20 patients, fourteen months after the operation, 6 are quite healthy; 6 died from relapse; of 5 the fate is unknown; in the remaining 3 a relapse has just begun. Hence 20 cases (40 per cent.) are cured.—*Przeglad Lekarski*, Nos. 48 and 49, 1896.

Sweden.

DR. F. EKLUND,
Brefväxlande Medarbetare
för den
SVENSK MEDICINSK
LITTERATUR.

Af alla i Sverge utkommande medicinska tidskrifter, böcker, afhandligar, monographier a. s. v. torde ett exemplar benäget öfversändas till

DR. ABRAHAM
FREDRIK EKLUND,
Sibyllegatan, 3 A,
Stockholm.

Some Cases of Astasia-abasia.—CHARLES PETREN reports several cases of which the first was an unmarried woman, 28 years of age. This he considers as one belonging to the chorea-like variety.

Case 2.—A single woman, 22 years old; also a case of chorea-like abasia.

Case 3.—Unmarried woman, 47 years old,—a case which showed unmistakable partial abasia, complicated with hysterical stigma.

Case 4.—Man, 69 years of age, which the author considers as one of trepidating abasia.

With regard to the nature of the disease, it seems to the author that any anatomical alteration in the spinal cord as cause of the disease must be definitely excluded, and that a similar alteration in the brain may be regarded as improbable. Abasia must, therefore, be considered as a dynamic disease. Walking

being, in all probability, a function of the brain, the author furthermore believes that abasia is due to a disorder of that organ, and that even that disorder is of a psychical nature, the more so since the motor derangement is manifestly systemic and limited to a certain system of movements. He cites a case as an example of a systemic paralysis, which is quite the contrary of abasia. For the time being no other conception seems to the author to be legitimate than to consider the abasia as a manifestation of hysteria,—that is to say, the cause of the abasia must be looked for in that portion of the mental life which is distinct from consciousness, or, in other words, in the non-dominion of the conscious part of the life of the soul over the psychical processes.—*Hygiea*, vol. lviii, No. 11, pp. 515 to 547, 1896.

Treatment of a Strangulated Hernia by Means of a Moderate, Continued Pressure.—LANDAHL reports a case in which a man, 60 years old, had suffered during some hours from a strangulated internal inguinal hernia of the size of a hen's egg. The patient's general condition was very poor, the lower portion of the abdomen was very sensitive to pressure, and he complained of violent pains. Repeated trials of reposition, after morphine had been injected subcutaneously, were of no avail. The patient having been placed in a suitable position, Landahl applied over the rupture, and a comparatively large surface of its immediate surroundings, a bag half-filled with about sixteen pounds of shot. After about fifteen minutes the hernial sac was empty and the hernia completely reduced. Recovery ensued.—*Eina*, vol. xx, No. 22, November 30, 1896.

On the Operative Treatment of Immature and Partial Cataracts.—J. WIDMARK gives statistics embracing one hundred cases, operated upon in the Hospital of the Seraphim, and supports the opinion that the preliminary operations for immature cataracts should be restricted to individuals under 55 or 60 years of age, but that extraction should be performed immediately in persons having exceeded that limit of age. The extraction of such cataracts of itself implies no material danger, provided the operator be experienced. The inconvenience lies in the fact that most frequently a second operation is required, and, inasmuch as it sometimes leads to serious complications, the operation for immature cataract in the aged gives a more serious prognosis than extraction of the completely mature form.—*Hygiea*, vol. lviii, No. 11, pp. 460 to 514.

Appendicitis and Inguinal Hernia.—F. KAYSER reports the above case as occurring in a man 22 years of age. The patient had twice before suffered from slight attacks of appendicitis. Six months after he first observed the existence of a right inguinal hernia of the size of a hen's egg, he was suddenly taken ill with diarrhœa, together with headache and vomiting, which ceased after twenty-four hours, while the pain remained localized in the lower part of the abdomen, especially in the greatly-increased rupture. The general condition was good, fever very slight. The hernial sac was laid open. Upon attempting to free the omentum, which adhered firmly to the lower part of the hernial sac, there burst suddenly an abscess of the size of a walnut, communicating through a hole, barely as large as a pea, with the

vermiform process, which was protruding in the hernial sac. The appendix was amputated, and the stump placed in the cæcum. After twenty-four hours the morning temperature was 39° C. (102.3° F.) and the evening temperature 39.7° C. (103.5° F.). Complete recovery ensued after twenty-two days.—*Hygiea*, vol. lviii, No. 12, pp. 557 to 560.

Clinical Notes and Therapeutic Suggestions.

The Role of Bread in the Etiology of Typhoid Fever.—During the recent epidemic of typhoid fever in Lyons, the hypothesis was suggested of the possible transmission of the disease by means of bread made with water (well-water, etc.) contaminated with the typhoid bacillus.

In this connection experiments were made by Professor Arloing, the results of which are re-assuring, both for the medical profession and the world at large. Cultures of Eberth's bacillus contained in little glass bulbs were introduced into the bread before baking. The bouillon thus introduced did not give rise to the slightest vegetation during the process of baking. Moreover, the bacillus of Eberth is destroyed after having been exposed to a temperature of 70° C. (158° F.) during only ten minutes, and chemists have shown that the temperature of an oven in which bread is baked reaches about 210° C. (410° F.). Payen has likewise demonstrated that in the centre of the loaf, the soft portion, the temperature is as high as 110° C. (230° F.) while it is being baked. The bread into which the bulbs were introduced was made of various kinds of dough, always with the same result.—*Le Bulletin Médical*, February 14, 1897.

Anticholera Inoculation.—In Haffkine's Report to the Government of India a detailed statement of his proceedings in India in connection with anticholera inoculation—or vaccination, as he seems to prefer to call it—is given. The results of the experiment made in Gaya jail are fairly encouraging. Of 433 prisoners, 215 submitted to inoculation, after cholera had appeared in the prison. Among the inoculated there occurred 8 cases, with 3 deaths; among the unprotected, 20 cases, with 10 deaths. The Lieutenant-Governor of Bengal considered that these results justified confidence in the prophylactic, but declined to sanction "voluntary" inoculation in the Bengal jails generally. "The circumstances are different in cases where outbreaks of cholera have actually occurred, as was the case in Gaya jail; the Government is under an obligation to resort to any remedy which seems as hopeful as this one does to prevent the course of the disease."—*Dublin Journal of Medical Science*, February, 1897.

Treatment of Epilepsy.—Flechsig reviews the unfavorable results of the Flechsig treatment of epilepsy with a combination of opium and bromides, as reported by several writers recently; he considers that in the fatal cases recorded no causal relation to the treatment has been shown, and points out that a fatal result is common enough in status epilepticus without any opium treatment. A careful watch should be kept by the physician for any untoward symptoms, which would indicate withdrawal of the drug;

and Flechsig is more inclined to blame the physician than the drug for the fatal results. His own experience of his treatment by increasing doses of opium has been most satisfactory, six cases out of fifty treated thus have had no recurrence for two and one-fourth years, and all the cases treated were severe cases of many years' duration, which had resisted all previous treatment. He begins with simple bromide treatment, and later, if there is no improvement, adds opium in increasing doses. If, however, the opium be used, the patient must be treated as one who is seriously ill; skilled nursing and the most careful medical attendance are essential to the treatment.—*Neurol. Centralblatt*, January, 1897, in *British Medical Journal*, February 13, 1897.

Toxicity of Perspiration in Epileptics.—It is generally known that the toxic origin of epileptic attacks is more and more recognized. Cabisto, guided by the experiments made in 1888 by Queirolo, concerning the toxicity of perspiration in general, has investigated the same in epileptics. He was thus able to show that the perspiration collected during, or immediately before or after, an attack almost killed the rabbit into which it was injected, and that, on the other hand, that secreted by the patient at a period more distant from the attack was perfectly inoffensive and differed in no way from that of a healthy person. Basing himself upon these experiments, Cabisto has largely made use of the diaphoretic treatment in epilepsy. His attempts were crowned with excellent results: Baths of hot air, associated with a bromide treatment, succeeded in diminishing the number of attacks in a great many patients.—*Le Bulletin Médical*, February 17, 1897.

Eucaine Hydrochlorate as a Local Anæsthetic in Hypertrophic Rhinitis.—Lewis S. Somers, of Philadelphia, has recently used the drug in a series of cases of hypertrophic nasal catarrh, in place of cocaine, to produce anæsthesia of the enlarged turbinals, so that reduction in their size by cauterization might be effected. A 4-per-cent. solution of eucaine hydrochlorate in distilled water was used, this corresponding to the strength of cocaine solution previously employed for that purpose. The drug was applied to the turbinated bodies in the same manner as cocaine, by saturating a cotton plug with a definite quantity of the solution and applying it to the part to be operated on until anæsthesia was completed. The cauterization was effected by means of chromic-acid crystals melted on the end of an appropriate applicator by means of the alcohol lamp. The results obtained can better be expressed by comparing the effects of the two drugs *seriatim*.

Cocaine usually produces its anæsthetic effects in the nasal cavity in from three to five minutes, anæsthesia continuing for twenty minutes to half an hour. In the series of cases in which eucaine was used, anæsthesia was not complete until eight or ten minutes had expired, and the loss of sensibility remained about twenty minutes. When an excessive amount of cocaine solution is used in the nares, it occasionally flows backward into the naso-pharynx, producing a very uncomfortable sensation of numbness in that region. It was noticed that this did not occur so markedly when eucaine was used, probably because of its slower anæsthetic action.

Eucaine causes hyperæmia of the mucous membrane when locally applied. This action is directly opposed to that of cocaine, and renders the drug of little value when the turbinal tissues are much hypertrophied, as the cauterizing agent cannot be introduced into the nasal cavity without injuring the septum. This action of eucaine in producing a temporary local congestion militates greatly against the use of the drug in active inflammatory conditions, but may possibly be obviated by using equal parts of eucaine and cocaine, as recommended by Berger. Dr. Reichert, of Berlin, has used eucaine in the throat and naso-pharynx, and claims that, aside from its anæsthetic action, it is harmless in medicinal doses, not rapidly and suddenly affecting the heart as does cocaine.

This oversanguine enthusiasm for the drug on the part of some observers should, the author thinks, be carefully considered before it is used very freely, as eucaine is a poison similar to cocaine, but possessing the great advantage of being decidedly less harmful to the organism when used in the same doses. Dr. Reichert also claims that eucaine influences a curative action in diseases of the Schneiderian mucous membrane, independent of its anæsthetic properties. Another advantage which the drug possesses over cocaine is that it may be kept for an indefinite time in solution with sterilized water, 1 part to 10. The solution may be repeatedly sterilized by boiling without impairing its anæsthetic properties.

Of minor importance is the fact that the price of eucaine is less than that of cocaine.—*Therapeutic Gazette*, January 15, 1897.

Prevention of Puerperal Convulsions.—J. N. Upshur, of Richmond, reports five cases illustrating the prevention of puerperal convulsions. He emphasizes the necessity of the early engagement of the medical man by the patient and his subsequent close supervision of the case. The urine may yield negative evidence, but severe head symptoms (headache, vertigo, etc.) and a hot, dry skin may warn us of danger. Excessive eating and overloading of the stomach are exciting causes. The preventive means are care of the diet, regular exercise in the fresh air, and special attention to the bowels and kidneys. In the attack Upshur recommends chloroform, bleeding, and active purgation, with prompt delivery of the child. If the patient remain unconscious after delivery, with symptoms of depression, an hypodermatic injection of strychnine nitrate will do good by sustaining the heart, diminishing the cerebral congestion, and keeping up the contraction of the uterus; morphine is positively contra-indicated. In the discussion which followed the reading of Upshur's paper several speakers testified to the good results they had obtained from the use of veratrum viride in such cases.—*British Medical Journal*, February 13, 1897.

Treatment of Eclampsia.—In an article on the above subject Charpentier, of Paris, submits the following conclusions:—

1. Every pregnant woman with albumin in her urine being exposed to attacks of eclampsia, the milk diet giving splendid results against the albuminuria, and in particular that met with in pregnancy, the urine of pregnant women should be examined with the greatest care, and, if the presence of albumin is ascertained, no matter how small it may be in quantity, an abso-

lute and exclusive milk diet should be instituted. This is the preventive treatment par excellence of eclampsia. In cases in which œdema is present, without albuminuria, it is well, if not an absolute necessity, to prescribe the milk diet.

2. If the patient is strong and vigorous and cyanosis is present, he begins by venesection, 200 to 300 grammes being drawn, followed by chloral. Milk is then administered by the mouth and, if necessary, through a sound.

3. The attacks themselves are opposed by inhalations of chloroform and diuresis is encouraged by subcutaneous injections of artificial serum.

4. If the woman is delicate, the cyanosis not very marked, and the attacks not very frequent, chloral should alone be given.

5. The physician should wait until the labor occurs spontaneously and should allow it to end without intervention every time that this is possible.

6. If labor come on spontaneously, but does not end because the uterine contractions are too feeble or too slow, he should end the labor by forceps or version, followed by extraction, if the child is living, or by a cephalotripsy, basiotripsy, or cranioclasy if the child is dead.

7. Before an intervention he should wait until there is complete dilatation, or at least a dilatability of the cervix, in order that the operation may be done without danger,—that is to say, without violence, and consequently without danger for the mother.

8. Induced labor should be reserved for a few exceptional cases.

9. Cæsarean operation and *accouchement forcé* should be absolutely rejected as current methods in the treatment of eclampsia.

He had not resorted to this last manner of treatment, excepting in cases unsuccessful by medical treatment, and when the woman appeared doomed to certain death. In a word, he deems it as an ultimate resource in a hopeless case.—*Annals of Gynæcology and Pædiatry*, January, 1897.

Sudden Death in Pregnant Women and Those About to be Confined.—A multipara, 29 years old, was taken with chills and fever during confinement. Surgical intervention was at once resorted to for the purpose of hastening parturition. On the third day icterus presented itself, and on the ninth and tenth days there were uterine hæmorrhages, of which the cause was inexplicable. On the eleventh day the patient died suddenly, without the appearance of any new symptoms.

Zweifel, who reported this case, was of the opinion that death was due to a pulmonary embolus, but, at the autopsy, no lesion was found, either in the lungs or heart, to which the sudden fatal termination could be attributed. The kidneys, however, were the seat of a subacute nephritis, and Zweifel believed himself justified in regarding death as due to subacute uræmia. Although no other example of this kind is recorded in medical literature, he thinks that this etiological factor should be added to those

capable of causing sudden death in pregnant women or those recently confined. He had already seen death result, under these circumstances, from embolus of the pulmonary artery, cardiac lesions, tumors of the brain and of the bulb, and stricture of the two coronary arteries from arteriosclerosis.—*Le Bulletin Médical*, February 14, 1897.

Prognosis in Pneumonia.—Osler shows that pneumonia is the most fatal of the acute infections of adults in temperate climates, the case mortality varying from 20 to 30 per cent. As to prognosis, age is very important; in children, for instance, the mortality, as quoted in Wells's statistics, is 1.9 to 3.3 per cent., while over 60 years of age the mortality is 50 to 80 per cent. Negroes show a higher death-rate, as a rule, than whites. Kidney disease was found to be present in 25 out of 100 autopsies observed by the author. Healthy adults seldom succumb; thus, in the German army the death-rate in 40,000 cases was only 3.6 per cent. Of the special points of prognostic importance, the degree of fever and the amount of lung-tissue involved are far less important than the toxæmia. Toxæmia has no constant relation to the extent of the lesion, and cases with profound toxæmia show wide variations from the typical clinical picture, while the local features of the disease are often quite overshadowed. Such cases early show cerebral symptoms, and are met with especially in epidemics and among old patients. Sudden death may be due to the action of the specific toxins, which probably affect the heart-centres rather than the myocardium; symptoms of collapse may set in within the first twenty-four hours and rapidly prove fatal. The amount of lung affected, even though extensive, is a much less potent cause of death than toxæmia. The depressing action of the toxins on the cardio-respiratory centres and the weakening effect of pyrexia on the heart-muscle are important factors during the crisis, and help to explain the fact that venesection in pneumonia is not attended with such good results as in emphysema, morbis cordis, etc. Against toxæmia, which is the important cause of the high mortality, there are at present no reliable measures at our disposal.—*American Journal of the Medical Sciences*, January, 1897.

The Action of Saline, Albuminoid, and Acid Substances Upon Calomel.—Since calomel has been introduced in therapeutics, all classic books have mentioned the danger of administering it in connection with saline substances. It is known to be a fact that, in the presence of alkaline chlorides or ammoniacal salts, calomel is transformed into corrosive sublimate. This danger has, however, been combated by various authors, some believing that the cases of poisoning observed are due to a personal tendency; others affirming that no sublimate is found in the digestive tract. In the opinion of the latter, the intoxication is due to a special action of the albuminoid substances upon the calomel (Torsellini). Ottolenghi has undertaken a series of experiments upon this subject, which make the daily use of calomel very interesting to the practitioner. He first proved, by experiments upon dogs, that the classic statements are clinically exact. When giving calomel,

even in therapeutic doses, and afterward making the subject drink saline or chlorhydrated water, much more rapid and intense symptoms are induced than when the calomel is administered alone. Now, it is a question whether the toxic effect in such cases is really attributable to the transformation of the calomel into sublimate. Ottolenghi does not consider it so; he has not been able to obtain this transformation *in vitro* at the temperature of the body, and can, consequently, not affirm in the least that it takes place in the digestive tract; on the other hand, also, the symptoms he has met with in calomel poisoning differ from those generally caused by corrosive sublimate.

It is therefore probable that the calomel only acts while going through the albuminoid substances of the body; it irritates the digestive tube, giving rise, in the first place, to diarrhœa and vomiting and afterward to alterations in the mucous membrane. This toxic and irritating action of the calomel is, however, principally observed when it is in contact with substances which render it more soluble and more absorbable. Among these substances, chloride of sodium and chlorhydridic acid, associated with various albuminoid substances, come first in order. These substances do not act by chemically transforming the calomel into a more toxic agent,—*i.e.*, corrosive sublimate,—but simply by facilitating its absorption in a mass. —*Gazeta d. Ospedali*, No. 1, 1897.

A Constant Symptom of Hysteria.—Strozevski, of Warsaw, reports that when examining hysterical patients he observed, in connection with other characteristic symptoms of this affection, one which, up to the present time, has not been noted. It consists of a complete abolition, or, at least, a very considerable diminution, of excitation upon certain portions of the body, by the contact of a delicate stimulant, such as, for instance, a piece of paper, or a hair.

If, on a healthy person, these spots are touched in this way, a sort of irritation or tickling is produced, with a more or less agreeable sensation. The experiment causes the person to place his hand upon the place subject to the excitation. The most readily excited points are: the external auditory canal and the mucous membrane of the nasal fossæ; then the lower eyelid and the skin of the forehead. The least excitable spots are: the armpits, the skin on and under the knees, and the sole of the foot. In these last-named places Strozevski excited irritation with gentle movements of the fingers.

In hysterical subjects the above experiment does not cause any sensation, or, in some rare cases, a very slight sensation. Gilles de la Tourette ("Traité de l' hysterie," p. 166) makes a brief mention of the abolition of the reflexes by tickling in the anæsthetic regions. Strozevski states that he has studied this symptom in more than fifty cases of hysteria, and that the patients always feel the contact. He has never found a case of hysteria in which this symptom was absent, not even in monosymptomatic hysteria; the same being the case in patients, who, relieved of their sufferings, were

about to leave the hospital. This symptom is equally present in hysteria with depression or with erethism, and in both sexes.

In exploring this irritability in various patients at the hospitals the author occasionally met with its partial diminution; that is to say, a feeble reaction under the armpit, the knee, and upon the sole of the foot, with a violent reaction in the auditory canal and the nasal fossæ. This diminution only occurred in very apathetic subjects, in whom he also observed an abolition or a considerable diminution of the reflex of the conjunctiva. This symptom is doubtless of central origin.—*La Médecine Moderne*, February 17, 1897.

The Degree of Anæsthesia Which Should be Induced Prior to Surgical Operations.—In an editorial the *Therapeutic Gazette* again calls attention to the importance of producing complete anæsthesia before beginning an operation, particularly when chloroform is the anæsthetic employed. In a previous editorial the author emphasized his belief that fright had a very marked influence in increasing the danger which is ever present when chloroform is administered; and in another had pointed out that a possible cause of the large number of fatalities during the early part of the administration of chloroform might be traced to the fact that, combined with fright, there was sent to the heart a powerful reflex through the sensory and pneumogastric nerves as soon as the knife touched the skin of the patient or the surgical operation was begun. This is particularly apt to be the case under chloroform, because it would seem probable that early in the administration of this drug, while there may be some interference with consciousness and some benumbing of the ordinary sense of pain, there is not an abolition of tactile sense, but, on the other hand, rather a condition of excessive irritability of the nerves involved in this sense. Further experience has intensified the writer's belief that his earlier views were correct, and the writings of leading surgeons and anæsthetists the world over seem to point more and more to the correctness of this opinion. As an instance of this he quotes the statements made by Dr. Hewitt, of London, in regard to this question, who had pointed out that one chloroformist will work with light anæsthesia, another with moderately deep anæsthesia, and another with very deep anæsthesia, but the success of Syme in administering chloroform appears to have been principally due to the almost invariable maintenance of a profound narcosis. He had also pointed out what the writer of the editorial has also pointed out in previous contributions to medical literature, that the very development of a profound narcosis tends to render the respiration regular and unhampered; whereas the administration of insufficient quantities of chloroform causes the respiration to be so irregular and uneven that it is impossible for the anæsthetist

during the course of a prolonged operation to make any accurate estimation of the quantity of chloroform which the patient is receiving. In other words, a part of the skill of an anæsthetist lies in his ability to give a sufficient quantity to induce deep anæsthesia without giving enough to produce a condition of danger.

In many instances the surgeon is inclined to regard the early delays in the administration of an anæsthetic as being a useless waste of time. The writer has seldom administered an anæsthetic for a surgeon, or watched its administration for one, without being impressed with the fact that his tendency is continually to hurry the anæsthetist, with the result that the drug is often at first pushed more freely than the anæsthetist himself believes to be proper. In the author's opinion, the most delicate stage in the administration of an anæsthetic is during the period when the patient is passing from complete consciousness into unconsciousness, and, if the patient is well chloroformed, far less skill and knowledge are required to maintain the anæsthesia in a condition of safety than was necessary earlier in the process.

Permanganate of Potassium as an Antidote to Morphine.—Acute poisoning by opiates occurs very frequently, morphine alone having more than one hundred victims per year in England. Torre reports a case of genuine resurrection obtained by a medicament proposed by Moor,—namely, permanganate of potassium.

The patient was a little girl, 5 years old, who swallowed by mistake a potion containing 0.06 gramme ($\frac{9}{10}$ grain) of hydrochlorate of morphine. Torre, who had been hastily called in, found the child already cold, in a very deep sleep, and almost comatose. There was no reaction to the various excitations; the pulse was barely perceptible; respiration slow, stertorous, with pauses. The gravity of the case did not admit of gastric lavage nor even the administration of an emetic; it was necessary to act at once against the poison itself. Torre immediately made the little patient swallow a solution of 0.20 gramme (3 grains) of permanganate of potassium in 200 grammes (50 drachms) of water, and then gave 3 hypodermatic injections of a 1-per-cent. solution of the permanganate in quick succession. Fifteen minutes later the condition of the child was already better; after she began to regain consciousness another potion of 0.06 gramme ($\frac{9}{10}$ grain) of the permanganate in 120 grammes (30 drachms) of water, was administered in spoonfuls. After several hours she was completely cured.

It is interesting to note in this connection the extreme sensibility of children to morphine. According to Filippi, one-fifth of the toxic dose for an adult will kill a child of 4 years. Zino reports the case of a little girl poisoned by only 2 spoonfuls of syrup of morphine. Paterson and

Kolest cite cases of children having died after the ingestion of a much smaller dose than that swallowed by Torre's patient. It is most probable that this child would also have died if the permanganate of potassium had not been administered.—*Gaz. d. Ospedali*, No. 143, 1896, and *Le Bulletin Médical*, February 17, 1897.

Radial Paralysis.—Professor Potain, in a clinical lecture, reviewed this subject as witnessed in one of his ward patients. It was the case of a man employed as waiter in a hotel, of generally good health, but who had contracted syphilis several years before. He drank rather freely and suffered consequently from dyspepsia and trembling in the hands. One day, four or five months previous to his entry into the hospital, he drank to excess and went home drunk. The following morning he found that his right hand was paralyzed. Motion in the elbow and arm was quite normal, but the hand dropped completely. The patient when questioned was unable to say whether he had lain on the right arm all night or whether he had taken another position. Electric treatment was tried without effect. On his entry to the hospital the condition of the paralyzed limb was as follows: Motion in the shoulder and the elbow was well preserved. In placing the forearm in pronation it was remarked that the hand dropped and that the patient closed the fist with difficulty. When the forearm was bent on the arm the supinator muscles contracted as usual, forming the cord remarked by Duchenne. The different forms of sensitiveness to touch, hot and cold temperature, and to pain were in no way changed as regarded the opposite side. However, sensibility was diminished on the dorsal.

Each time that any cause acts moderately on a limb the weakest muscles suffer the first. The weakest muscles are always those styled "antagonistic," which, contrary to the flexors, never enter in action with a determined object. The extensor muscles of the forearm are comparatively small and weak and poorly nourished; it was not, consequently, surprising that they should be the first to be attacked. The extensors of the arms are more resisting, being more active; their function is to ward off objects, such as blows; the triceps muscle possesses, however, less energy than the biceps and the brachialis anticus. It was for that reason that lesions of the cortex situated in the points corresponding to the origin of the nerve-filaments of the upper extremity were localized in the extensors. In any case, if the paralysis of the patient were of cortical origin, no troubles of the sensibility would have been observed, consequently, the brain could not be incriminated. He would add that paralysis resulting from cortical lesions left intact reflex phenomena and electrical reaction. As had been already said, paralysis of the radial nerve might have a myelitic origin; some examples of this paralysis have been recorded. Professor Hallopeau

reported the case of a locksmith, who was affected with diffuse myelitis, of which paralysis of the extensors was one of the first symptoms. It was, consequently, necessary to ask one's self if the present paralysis should be considered as one of medullary origin. The answer would be decidedly in the negative, as, in the cases of Hallopeau and others, the other extremities were rapidly affected in their turn. It was manifestly a case of paralysis localized in the periphery. That kind of paralysis recognized several causes. There were infectious paralysis and toxic paralysis. Bernhardt published a case of radial side of the thumb, the index and the middle finger corresponding to the distribution of the radial nerve. The posterior muscles of the forearm were atrophied and did not contract under the influence of a strong electric current, while the muscles of the arm and the flexors of the forearm contracted freely. There was nothing to remark about the sight and hearing; however, the right pupil was a little smaller than the left. The digestive organs, the heart, and lungs seemed to be in a normal condition.

The diagnosis was that of motor paralysis affecting the muscles supplied by the radial nerve. It is known, said M. Potain, that this nerve is a mixed nerve, both motor and sensitive; however, as has been seen a number of times, in this man the motor portion was alone touched. The interruption of the current in the radial nerve is due to various causes. It can be the result of a malady of the trunk of the radial or of its branches; it can also be the result of a cerebral or medullary lesion. The first question which imposed itself on the attention of the clinician in the case before them was to determine to which of the above two causes should be attributed the paralysis; it was necessary to find out if it were a paralysis of cerebral or peripheral origin. As to the cerebral origin of the paralysis, it would seem difficult to attribute it to the patient before them, and especially to admit that the lesion was located in the motor zone of the cortex. Yet the incomplete paralysis provoked by physiologists in destroying certain cortical regions of the brain in animals affects the extensors.

Paralysis occurring in the course of typhoid fever and the same lesion had been frequently seen in patients suffering from acute rheumatism. Toxic paralysis was frequently met with in chronic poisoning by either lead, arsenic, or alcohol. Of all these varieties, the influence of saturnism was about the best understood, as the resulting paralysis was the most complete and the most characteristic, although its mode of action was not clearly established, it being difficult to admit that the lead had a preference for the extensor muscles. Perhaps the best explanation of the phenomenon would be found in the relative weakness of these muscles. It would be possible to believe that in the case before them the paralysis was due to

lead poisoning, for the sign given by Duchenne as being characteristic of that affection was present to a greater or less degree; he referred to the persistence of the cord of the long supinator. But it should be observed that in the patient in question the supinator muscles remained insensible to faradization, showing that their power of contraction was weakened, contrary to what exists in saturnine paralysis. In the patient was found another symptom which had been attributed to lead paralysis, but which, in reality, belonged to all cases of paralysis of the radial nerve; it was the tumor on the back of the wrist; that tumor, which had been first remarked by Gubler, consisted of an indolent swelling situated over the corpus, giving the sensation of a thickening of the extensor tendons, and appeared to be due to the constant pressure exercised by the tendons on the mucous bursa by reason of the flexion of the hand. After all those reflexions, and after eliminating different possible causes, paralysis of the radial nerve itself seemed to him to be the diagnosis that imposed itself, but it was necessary to discover by what means the affection was produced. In the way in which the paralysis was observed it was not easy to establish the cause. The patient went to bed quite well and awoke in the morning with a powerless hand. The radial nerve could be paralyzed when wounded or compressed by a tumor, the use of crutches, etc. The influence of cold was not less evident as in the case of facial paralysis. Frequently things happened in that way; a man who had drunk freely fell asleep with his arm thrown over the back of a chair and exposed to the air; when awakened the arm was paralyzed. The idea of radial paralysis *a frigore* was universally accepted, until Panas showed that compression was also an important factor, as was that of alcoholism. In this patient all those causes were, perhaps, combined.

Would the paralysis be temporary or would it remain persistent? If frequently radial paralysis lasted but a short time, it was not rare to see it prolonged several months or even years. In the present case the paralysis had already lasted five months. Should it be considered curable? Such was not his opinion, although it was difficult to say how long it would take for the function of the member to be restored. In any case, to hasten as much as possible the result, two things were necessary: warn the patient against his intemperate habits, and apply galvanic and faradic currents to re-establish the nutritive activity. The alternating use of these two currents would produce in his mind, the best effects.—*Medical Press and Circular*, February 3, 1897.

Public Sanitaria for Consumptives of Moderate Means.—In view of the New York Board of Health's project of a hospital for consumptives the *New York Medical Journal* of January 30, 1897, recalls a plan proposed some time ago by Dr. Achilles Rose, of New York.

The advanced knowledge of the causes of diseases, said Dr. Rose, the progress in sanitary and medical sciences in general, have demanded and demand radical improvements in the construction of our hospitals and sanitaria. Such demand has not been responded to as regards the better knowledge of the etiology of tuberculosis. There are no sanitaria in which

not only the wealthy, but likewise all, tuberculous patients of moderate means may find the best conditions for the cure of their disease. In the present state of our knowledge the consideration in question here is climatic treatment.

Dr. Rose stated that the idea of advocating the establishment of a public sanitarium for tuberculous patients of the working class, large enough to accommodate applicants from all parts of our country, had occurred to him some months before. Dr. Tyndale had assisted him with his knowledge of the climatic conditions of the United States in formulating a plan, and the result of their united labors was now given. They proposed to establish a sanitarium for consumptives upon these cardinal principles:—

1. To give patients the benefit of climatic treatment combined with the most advanced methods of treatment. This was to be in contradistinction to "houses of rest" or "homes for consumptives," where cure was a secondary consideration, and a fatal termination taken for granted. Fully 80 per cent. of consumptives were curable.

2. The acknowledged climatic factors for the cure of tuberculous consumption were *dryness*, *elevation*, and *equability of temperature*. This called for a situation at some considerable distance from the ocean,—the great source of atmospheric moisture,—for an elevation not less than 1500 and not more than 5000 feet above sea-level, and for a more or less southern latitude to insure a reasonable degree of equability of temperature and to avoid extreme cold in winter.

3. What was imperatively needed and universally acknowledged by the medical profession as an absolute necessity was a sanitarium for patients of moderate means and, if possible, within easy reach of all the large cities of the Atlantic sea-board.

The proposition in detail was as follows:—

1. The sanitarium is to be for patients of *moderate* means; the charges for board and treatment not to exceed $5 a week. In course of time, separate accommodations for the wealthier class of patients are contemplated.

2. For patients of moderate means, we rely upon the large cities of the Atlantic coast—Boston, Providence, New York, Brooklyn, Philadelphia, Baltimore, Washington, and Richmond—and the South.

3. The location is not to be farther north than the Alleghany and Blue Ridge Mountains of Virginia and West Virginia,—that mountain-region which forms a boundary between Virginia and West Virginia and extends into Maryland. All other mountain-regions north of that designated, where consumptives are sent by their physicians, either to already existing sanitaria or to shift for themselves, are totally inadequate for four weighty reasons: (*a*) because they are too cold in fall and winter; (*b*) because they are either not cheap enough or when cheap can accommodate a limited number only; (*c*) because they are too far from home for most patients; (*d*) because of lack of systematic treatment in most of them.

To offset these disadvantages, the following suggestions are offered for consideration :—

As to climatic conditions, warm, but not hot, in summer; cool, but not cold, in winter. Relative dryness of atmosphere, due to distance from the Atlantic Ocean. Elevation of from 1500 to 2500 feet, insuring reduced atmospheric pressure—one of the chief factors of successful treatment—and an additional element in the production of dryness of atmosphere.

To recapitulate as to temperature: Elevation secures immunity from excessive heat in summer. A southern latitude guards against excessive cold in winter.

4. The medical profession to be interested, also the leading local, State, and national societies, and all the medical journals.

5. A combination of climatic treatment with present advanced other methods will yield results which cannot fail to attract widespread attention and give satisfaction.

6. To make the institution additionally *self-sustaining* and furnish much needed occupation to a large class of patients who would otherwise be brooding over their misfortunes. To this end a tract of land should be acquired, sufficiently large to enable us to raise the natural products of the soil,—vegetables, fruits, poultry, and cattle,—thus supplying the institution with food of the best kind, on the one hand, and furnishing light occupation to patients, on the other.

Particular attention is drawn to two highly important points in this connection: A fertile soil is to be acquired around or near the institution. The region selected is only twelve hours by rail from New York City.

So far as they were then able to ascertain, some of the most favorable situations were on the line of the Chesapeake and Ohio Railroad. Alton and White Sulphur Springs also were mentioned.

☞ *Any journals, exchanges, reprints, monographs, or books not sent directly to the editorial office, 28 rue de Madrid, Paris, will not receive attention either in the "Annual" or the "Universal Medical Journal."*

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CLEANLINESS IN CATARRH.

The fluid used in cleansing the nasal cavities in both atrophic and hypertrophic rhinitis should be of about the specific gravity of the serum of the blood, and this is acquired in the solution advised by Dr. Pynchon, which is as follows :—

R	Sodæ bicarb., ...	2 ounces.
	Sodæ biborat, ...	2 ounces.
	Listerine (Lambert's), . . .	8 ounces.
	Glycerin, ...	1½ pints.

One ounce of this formula added to a pint of water yields a bland and pleasant alkaline solution with a specific gravity of 1.015.—Dr. Edwin Pynchon, in *Annals of Ophthalmology and Otology.*

THE SUCCESSFUL TREATMENT OF ANÆMIA BY PEPTO-MANGAN "GUDE."

In a paper read by Dr. H. P. Loomis before the New York Academy of Medicine the results were given of a series of experiments undertaken for the purpose of determining the value of Gude's Pepto-Mangan. Believing that the only accurate test of improvement in such conditions as anæmia is an increase in the amount of hæmoglobin, the writer examined the blood before, during, and after the use of that preparation. Eight persons with marked anæmia were selected and careful notes of the cases taken while under treatment. No other medicine was given.

The preparation of iron and manganese referred to is what is known as the "Liquor Mangano ferri Peptonatus Gudes,"—or, as is written on a prescription, Pepto-Mangan "Gude,"—a clear, dark-sherry-colored neutral fluid, non-astringent, and of mild, aromatic taste, prepared by Dr. Gude, a chemist of Leipzig. The dose prescribed was a tablespoonful after meals, in milk or sherry wine. It is claimed that the combination of the iron and manganese with a peptone has decided advantages over the albuminate of iron in its permanency and ease of assimilation. Each tablespoonful of the mixture contained 3 grains of iron and 1 grain of manganese.

In most cases the pepto mangan (Gude) had no constipating effect. Of the eight cases in which accurate notes were kept, all showed a marked improvement both in the increase in the amount of hæmoglobin as well as increase in the number of red blood-corpuscles. The average increase of the hæmoglobin was 2.2 per cent., and of the red blood-corpuscles 1,258,000. It is a well-known fact that in the hæmoglobin of the red blood-corpuscles manganese is always found. Opinions differ as to its significance. At the present time the majority of observers attribute to it an oxygenating function, some claiming that quantitively it is more active than iron. It certainly gives off oxygen more readily than iron. Hence it has long been held that its introduction into the body would increase assimilation.

CONSTIPATION IS HARMFUL.

Although a recent writer has labored to prove that chronic constipation produces no bad results, his statements are directly opposed to the general experience of physicians. At the last meeting of the Mississippi Valley Medical Association, Dr. I. N. Love, of St. Louis, expressed himself exactly according to our belief, when he said: "There can be no doubt that the majority of diseases which afflict human beings, male and female, are largely dependent on constipation." Just in this connection might properly be added the best relief and the best cure for this condition. We refer to Syrup of Figs as prepared by the California Fig Syrup Co. Excellent, economical, effectual.

THE

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Selections from Society Proceedings.

FRANCE.

ACADEMY OF MEDICINE OF PARIS.

Appendicitis and Its Treatment.—DR. LUCAS-CHAMPIONNIÈRE spoke as follows: "I am of opinion that, if in some cases the vermiform appendix is attacked, either primarily or so suddenly that no hesitation is possible, there exist very many cases in which the large intestine has been long diseased and filled to repletion before the morbid condition of the appendix shows itself definitely. In these cases medical treatment may assume a legitimate position. We should observe a certain prudence, and not look upon removal of the appendix as a necessity in most cases nor upon its resection as the undoubted remedy and one devoid of danger.

"It seems hazardous to state, as is frequently the case at present, that the appendix only can be affected, and that, whatever forms may be assumed by the intestinal accidents (typhlitis or perityphlitis, for example), they are always due to appendicitis. It seems likewise to me wrong to state that it matters little whether the appendix is found or not in the purulent foci which are opened; that furthermore the appendix only is to blame, even if it has disappeared, has been eliminated, absorbed, or has become gangrenous.

"Do we not know, from having often observed it, that salpingitis or tuberculous peritonitis may simulate appendicitis? If the abdomen be opened, the appendix is naturally found to be normal. Intestinal irritation and repletion may likewise give rise to symptoms similar to those of appendicitis. Such facts are well known and have frequently been observed by surgeons.

"Consequently it may be looked upon as an exaggeration to say that

the trouble always begins at the appendix. I think, on the contrary, that usually it is the large intestine which becomes filled to repletion, before the appendix in its turn is affected. An appendicitis thus produced may be recovered from; the appendix is not such a dangerous organ as it has been claimed to be. What is more, resection of the appendix may not cure. Symptoms due to colitis remain, and these must be treated in order to obtain a definite recovery. Dr. Roux has demonstrated this fact.

"Intestinal engorgement plays, in my opinion, a primary part, and may explain cases which without that would be incomprehensible. The symptoms due to appendicitis seem to be owing much more to stasis than to its excitation.

"Appendicitis is much more frequent too in cities than in the country. It would seem to be more frequent in England and in the United States,—a condition which is, perhaps, due to a special alimentary hygiene. Familial appendicitis may likewise be explained in such a manner.

"These ideas seem to me important from the therapeutic point of view. When the intestine appears affected the surgeons of to-day endeavor, the first thing, to cause an evacuation of the intestine to occur. Now the physicians carry out the exact opposite. If they suspect appendicitis they give opium, which is an excellent method of rendering an operation necessary before long.

"I think, therefore, that appendicular crises may be avoided by purging, while they may even be brought about by the administration of opium. I consider that even during a crisis the intestine should be evacuated, a purge being given; by such means cases may frequently be radically cured. Consequently evacuation by means of purgatives should be the first therapeutic means employed. It is likewise the first hygienic means. It is not impossible that if appendicitis occur so frequently nowadays it is because purging, which was formerly so considered, is but rarely employed.

"I think, too, that the patients threatened with appendicitis should be moved about. The influence of bicycling upon the production of appendicitis is a mere fancy. Not a single case has been reported. Rather is it the lack of motion—repose—which causes appendicitis.

"This does not mean that appendicitis should never be operated. But an operation should never be performed in a hurry and without very good reasons.

"The operation of appendicitis has a very low mortality, but death does at times occur. On the other hand, abdominal hernia may arise after the operation. Such a comparatively frequent occurrence should not be disregarded.

"Consequently, if the exceedingly acute forms of appendicitis pointed out by Professor Dieulafoy be put to one side, it may be said that in all subacute cases of appendicitis one should be very prudent, and should not forget that mistakes in diagnosis are very easy, and that alongside of true appendicitis may be found pseudo appendicular symptoms, due to typhlitis, perityphlitis, and to intestinal overloading, all of which are affections which belong to medical treatment, but not to operative treatment."

Professor Dieulafoy said: "In an article on intestinal lithiasis I mentioned that in a number of cases I had never discovered appendicitis in patients suffering from intestinal lithiasis. This did not mean that I denied the possibility of the co-existence of appendicitis and intestinal lithiasis, which are due to the same cause,—gout.

"I think, however, that to say that a patient suffering from membranous enteritis and intestinal lithiasis must eventually suffer from appendicitis confuses uselessly the minds of many people.

"Thus, if you take the physicians who have studied the subject of muco-membranous enteritis,—Dr. Comby, for example; and Professor Potain, who, out of 20 patients discovered 1 suffering from this affection, of which he notes 103 cases,—neither of the two have seen appendicitis in such cases.

"Dr. Bottentuit has seen 460 patients at Plombières suffering from membranous enteritis; he has seen them again, two and three years in succession, and has never observed any symptoms of appendicitis. During twenty-seven or twenty-eight years not a single operation for appendicitis has been performed at Plombières, nor have symptoms of typhlitis or perityphlitis been observed. In 1895 Dr. Létienne made a study of muco-membranous enterocolitis; he did not even mention appendicitis. My notes relate to 60 patients suffering from muco-membranous enteritis, and never in them have I seen appendicitis occur. We thus have a total of 700 to 800 individuals suffering from muco-membranous enterocolitis, with thousands of attacks, and not a single case of appendicitis occurring among them.

"I think, then, that I may rightfully look upon patients suffering from muco-membranous enteritis and appendicitis as having diseases existing simultaneously and due to the same cause,—arthritism, or gout,—but that appendicitis is not the necessary termination of membranous enteritis.

"It is now thought that appendicitis may be met with as a complication of many affections; we should not think, however, that appendicitis has absorbed everything altogether. The cæcum is not unattackable by some infection or irritation; chronic typhlitis, muco-membranous or lithiasic in nature, localized in the right iliac fossa, may occur, just as there occurs chronic colitis, either muco-membranous or due to intestinal lithiasis.

"Would you say, in such cases, that the patients are suffering from appendicitis? It would be a serious mistake, but it is one which is often committed nowadays.

"I have expressed the opinion that the first cause of appendicitis is the result of an increase of virulence in bacteria contained in a closed cavity. Dr. Réclus does not look upon the closed cavity as necessary. The inclinations downward of the intestine suffice. How is it possible to reconcile this opinion with those cases in which the appendix is turned upward? In such cases it would be easy, on the contrary, for the appendix to empty itself."

Dr. Réclus inquired: "How about the bend in the appendix?"

Medical Society of the Hospitals.

Appendicitis Due to Influenza.—Dr. P. Merklen reported: "I have just seen three cases of appendicitis, either preceded or accompanied by the general symptoms and catarrhal phenomena of influenza. I should have looked upon it as a simple coincidence if other observers had not recently called attention to the relations existing between appendicitis and general diseases. Influenza, the eruptive fevers, and typhoid fever seem to act by increasing the virulence of the usual micro-organisms existing in the intestine when diseases occur in patients presenting a familial predisposition to appendicitis. In this, perhaps, may be seen an explanation of the epidemics of influenza frequently noted.

"The first case was that of a young man of 18 years, who suffered from recurrent familial appendicitis; the second instance occurred after an attack of tonsillitis due to influenza.

"The second case was that of a boy aged 15 years, who had never shown any abdominal symptoms. When the attack of appendicitis occurred he had already been suffering from influenza for about ten days.

"Finally, in the third case, aged 3 years, the appendicitis began under the form of an influenza localized both in the tonsils and the intestines.

"These three cases, which are unlike as to their clinical evolution, may nevertheless be compared:—

"1. Because of the occurrence of the affection in children presenting familial antecedents of appendicitis.

"2. On account of the evident relations between the appendicitis and the existing influenza due to a change in the seasons.

"We shall lay no further stress on the importance of heredity noted in 40 per cent. of the cases by Roux, of Lausanne, and of the familial predisposition studied by Faisans, Brun, and Talamon.

"As to the influence of general diseases on the development of appendicitis, it may be explained by an increase in the virulence of the micro-organisms contained in a latent state in the appendix. Here should be recalled the comparison made by Sahli, of Berne, between tonsillitis and appendicitis, which he compares to angina of the appendix.

"Like the tonsil, the appendix abounds in closed adenoid follicles, and, like tonsillitis, appendicitis recurs in patients who are predisposed to it. Finally, since tonsillitis is one of the most frequent manifestations of influenza due to a change in the seasons, it is not to be wondered at that appendicitis should occur under the same conditions.

"The appendicitis which occurs under such circumstances does not differ from ordinary appendicitis; there are no special clinical features proper to influenzal appendicitis; consequently the therapeutic indications are those of appendicitis in general. Unfortunately it is not possible at present to establish a prognosis from the clinical form of an appendicitis. One patient will have four or five rather serious attacks of appendicitis, yet his appendix, when removed, will present only light and superficial lesions of appendicitis.

"In another case perforating appendicitis with superacute peritonitis

will occur at once or will follow one attack of simple appendicitis. Clinical observation does not afford a more serious basis for prognosis. It would seem, however, that perforation of the appendix occurs more frequently during a first attack than its recurrent appendicitis. However, if in such cases much may be hoped for, it is not possible not to fear.

" The future of any appendicitis is uncertain, and it is this which has led many surgeons to advise, in every case where diagnosis is certain, the preventive removal of the appendix. However harmless this operation may be, it is nevertheless an important one, and the moment has now come to decide whether it must be received with no more objections than we make to the radical cure of hernia. Perhaps a serious inquiry into the precursive symptoms of grave cases of appendicitis—the character, form, and duration of the first attacks—would allow the indications of this operation to be more precisely stated, and would enable the operation to be avoided in unnecessary cases.

" I look upon the operation as absolutely indicated

" 1. In perforation of the appendix.

" 2. In a recurrent attack of familial appendicitis.

" 3. In recurrent appendicitis interfering with the career of a young man."

Dr. Rendu said: " I am at one with Dr. Merklen as to the groundwork of his remarks. When during an epidemic of influenza intestinal symptoms are observed in a patient there is a tendency to call it intestinal influenza; thus appendicitis may be attributed to influenza. I am rather of the opinion that in such cases there has occurred appendicitis, having begun with general symptoms and infectious enterocolitis."

Dr. Florand stated: " These operative indications are always difficult, for often we are unable to distinguish what belongs to appendicitis. Some time ago I caused an operation to be performed on a young man suffering from an attack of recurrent appendicitis following muco-membranous enteritis, believing that thus the frightful pain of which the patient complained would disappear. This did not occur; the pain persisted, showing that it was due to the muco-membranous enteritis and not to the appendicitis."

Dr. Merklen declared: " I look upon the operation as necessary in recurrent appendicitis."

Dr. Moizard remarked: " During a first attack I advise expectation; if a second attack occur, I advise an operation."

Dr. Siredey said: " It is exceedingly difficult to lay down precise laws for the therapeutic indications, inasmuch as we can never judge of the state of the appendix from the symptoms. I have seen a patient in whom there had occurred only attacks of appendicular colic and in whom a premature diagnosis of hepatic colic had been made, but who was operated when the diagnosis was corrected. In this case the appendix had not become adherent, but was much affected. Another patient was operated on after having manifested symptoms of appendicular colic, and the lesions of the appendix were considerable and perforation imminent. On the other hand, I could quote observations where exceedingly serious symptoms

were present, while an operation revealed a comparatively little affected appendix."

Dr. Merklen remarked: "The difficulty is to know on what to found the prognosis as to the future. Dr. Moizard says that a second attack must be waited for; do not the same dangers exist after the first attack?"

Said Dr. Rendu: "In corroboration of the opinion of Dr. Siredey I may cite the case of the son of one of our brothers; in this young man I was able to ascertain the presence of two very slight attacks of appendicular colic; notwithstanding the mildness of the affection, I advised operation on account of the recurrence, and was wise in so doing, for we found an appendix which was deeply ulcerated throughout its entire length."

Dr. Siredey added: "I might cite two other personal observations in which there occurred perforation of the appendix, notwithstanding the fact that the clinical symptoms were not serious. One of these patients came into the hospital with symptoms of appendicitis,—moderate fever and a swelling. These symptoms improved rapidly, and four days later the patient seemed cured and asked, with insistance, for food; during the evening the patient manifested all the symptoms of peritonitis due to perforation and died in a few hours."

Dr. Merklen observed: "This discussion may be summed up briefly by saying that we agree as to the necessity for operating after a second attack of appendicitis, but that it must yet be decided what must be done after a first attack of appendicitis."

Dr. Galliard said: "It would, I think, be useful to throw light upon the discussion by making out as extensive a list as possible of the results of operation, and of the fate of non-operated cases."

Professor Hayem added: "Such a list would be, indeed, useful, but the surgeons should be asked to state what has been the result of operations done secondarily, between attacks, and of urgency operations."

Dr. Rendu replied: "All cases which I have caused to be operated on between attacks have recovered; on the other hand, all cases that I have caused to be operated on at once have ended fatally."

The Difficulty of the Diagnosis of Appendicitis in Hysterical Subjects.—Dr. Rendu declared: "When examining a patient suffering from appendicitis great attention should be paid to the unequal susceptibility shown by various individuals, as some react but little, while others, on the other hand, show reflex symptoms of great intensity. The two following cases prove that very slight appendicular lesions in hysterical patients may be accompanied by extremely alarming symptoms.

"The first case was that of a young Breton girl, aged 18 years, who, before coming into my service, had been treated in Dr. Brissaud's service for symptoms similar to those noted by me. Dr. Brissaud kindly gave the following information concerning the patient: When she entered Dr. Brissaud's she was suffering from pain limited to the cæcal region, dating from three or four days back, and corresponding with an oblong mass of about the size of the fist, directed downward and inward, larger above than below, somewhat dull to percussion, doughy to the touch, and exceedingly sensi-

tive to pressure. At the same time there were present constipation and persistent vomiting or rejection of food, dating already three or four months back. Dr. Brissaud looked upon it, at first, as an attack of appendicitis, but on noting that the incoercible vomiting, which had already lasted for four months, had not modified to any appreciable degree the general condition of the patient, he looked upon the iliac symptomatic complexus as a temporary symptom due to a neuropathic condition.

"Dr. Monod, on being consulted, advised putting off an operation, and, after a few days, the so-called appendicitis disappeared and was replaced by left hemianæsthesia, following a nervous attack which occurred during the night. The vomiting persisted, however, with secondary loss of appetite, and the general condition became worse. It became necessary to feed the patient by means of the stomach-sound, and eventually by rectal injections. Meanwhile the appendicitis re-appeared, then disappeared, on each occasion with identical symptoms, but with this peculiarity,—that at each attack the cæcal swelling appeared less voluminous, while the spontaneous or provoked pains in the iliac region were more acute.

"The attacks of pseudo-appendicitis thus re-appeared five or six times; finally, no more attention was given to them. During one of the attacks anuria was present, with sharp, abdominal pain. This pain would have led to a diagnosis of peritonitis had its real nature not been known. It was merely the hysterical symptom, termed by the English *spurious peritonitis*, which frequently accompanies the localized or general tympanitis of hysteria major.

"Dr. Brissaud states that the patient left his service quite cured, and cured by his psychotherapeutic treatment, which the other patients in the service had spontaneously taken upon themselves to carry out. The affection was thus a *phantom appendicitis.*

"The patient left Dr. Brissaud's service and three months later entered my service in consequence of a new attack of pseudo-appendicitis. I was totally unaware of her former presence in the service of Dr. Brissaud, and on account of the alarming symptoms had the case operated. We found a congested, but non-ulcerated, appendix; it was a simple follicular appendicitis. Hysteria thus had exaggerated the symptoms which this slight appendicular lesion would have caused in another patient; the peritonism was due to the neurosis.

"After the removal of the appendix the patient recovered completely.

"In a second case hysterical symptoms simulated a perforation of the stomach (sudden shock, suppression of urine, great abdominal pain, vomiting, hiccough, and abundant hæmatemesis). Operation was performed with the idea of finding a perforation of the stomach, but this latter organ was healthy; the appendix, which was large, was removed.

"As in the preceding case the affection consisted in an extremely slight appendicitis characterized only by appendicular congestion, but the nervous condition had considerably exaggerated the symptoms usually found in such cases. Since the operation the patient has remained completely cured."—*La Médecine Moderne*, March 24, 1897.

UNITED STATES.

New York Academy of Medicine.

The Diagnosis and Management of Syphilitic Brain Diseases.—E. C. Spitzka, of New York, considered the diagnosis between genuine melancholia and a somewhat similar condition observed in the initial period of syphilitic dementia. The true melancholiac was sad because he could not be anything else; the other was depressed because he was unable to attend to his business and suspected that his friends realized this. The former suffered from insomnia, while the melancholiac of the initial period of syphilitic dementia slept perfectly through the night, and often also through the day. The true melancholiac was universally neglectful of his dress; the other was very particular about certain parts of his dress and negligent about other portions. The true melancholiac shrank from company; the syphilitic melancholiac was irritable, and his symptoms varied greatly from day to day. The syphilitic finally drifted into a condition in which slight, but characteristic, changes in the medulla oblongata were found. The diagnosis was important, because proper treatment in the early stage might prove radically remediable. In his experience, the common error had been that of too exclusive reliance on the iodides. His own initial treatment was always with mercury, preferably by inunction. These patients were usually over 45 years of age, and suffered from renal insufficiency.

F. R. Sturgis, of New York, thought that these patients often threatened suicide, but seldom attempted it, for in syphilitics the power of coming to a decision was lost. Their melancholia developed apparently from totally inadequate causes, and they often exhibited sudden alternations from extreme depression to a more natural temper. Unquestionably mercury was our mainstay in these cases, but the iodide played an important part, because its action was very much more rapid than that of mercury; it would often hold in check the more serious subsequent symptoms, and the rapid improvement that it caused in the symptoms often settled the diagnosis. The time and the doses of an iodide were the most important points in the successful treatment of nervous syphilis. An amount of from 300 to 600 grains of iodide of potassium in the twenty-four hours would make all the difference between failure and cure.

L. D. Bulkley indorsed the views of the reader of the paper as to the value of a certain amount of mercury with the iodide of potassium. It enabled us to accomplish the same result with a greatly diminished dose of iodide. It was his custom to prescribe inunctions, or one or two mercurial baths a week, along with the use of the iodide internally.

Williams said that, if in these cases of melancholia the temperature remained subnormal the greater part of the time for several successive days, we were justified in suspecting late syphilis. Absolute rest in bed for from three to six days was important, and during this time it would be found that the temperature would gradually rise.

D. F. Sherman also indorsed the view that it was important to use mercury in liberal doses, along with the iodide.

Spitzka had intended to state that these syphilitics often contemplated suicide, but only actually committed it on the impulse, and without premeditation. Although gastric irritation was quickly produced in ordinary persons by large doses of iodide, in the cases under discussion very large quantities of the iodide not only were tolerated, but often seemed to act like a charm.

The Treatment of Locomotor Ataxia.—Landon Carter Gray, of New York, stated that a study of seventy-seven cases of locomotor ataxia recorded in his case-books had led to one conclusion,—that in every instance the symptoms had been improved by treatment, and in a few the improvement had been startling. In most of them it had been satisfactory. In his opinion, rest was the most important part of the treatment, for every muscular movement involved a strain on the diseased parts. In the severer cases the patient should be in bed for weeks, whereas in the milder ones a few hours a day in bed might be sufficient. The amount of rest required varied greatly with different individuals. Whatever might be the rationale, it was certain that antisyphilitic treatment would often have a most startling effect on the progress of the case.

Erythromelalgia.—Henry L. Elsner, of Syracuse, reported a case of this very rare condition. It had occurred in a washerwoman, and the first symptoms, headache and flushings of the face, had developed in 1893. Subsequently she complained of pain in the hands, and soon afterward a maculopapular erythema developed on the hands. The pain was so exquisite that she described the sensation as that of being "consumed by a living fire." Gradually erythematous spots formed on the knuckles and tips of the fingers and thumbs, the lesion being severest on the thumbs. Curiously enough, while this erythema was present, there developed a true Raynaud gangrene on the tips of the thumbs, with a gradual separation of the distal phalanx. The only explanation that he could offer was that, as a result of the prolonged distension of the blood-vessels, the intima had become thickened and the circulation sufficiently obstructed to cause this gangrenous process.

Strophanthus.—Reynold W. Wilcox, of New York, presented the result of twelve years' study of this drug. He said the reason that strophanthus had been considered by some observers to be uncertain was that there were four distinct species of strophanthus. His own observations had been made with *Strophanthus Kombé*, the same preparation as had been used in Fraser's original investigations. He drew the following conclusions: 1. That strophanthus increased the muscular action of the heart by direct action on the muscle itself. 2. That it operated more rapidly than any other cardiac drug. 3. That it practically had no effect on the size of the blood-vessels. 4. That it regularly favored elimination by the kidneys. 5. That unless too frequently repeated, it had no cumulative action. 6. That it was unlike the other cardiac drugs in acting only on the muscle of the heart. 7. That it was about three hundred times as strong as the same weight of digitalis, and three or four hundred times as powerful as the

same amount of caffeine. He recommended the use of strophanthus instead of digitalis in cases in which digitalis usually acted badly, in which the prolonged use of it caused dangerous vascular spasm.

The Relation of Impure Drinking-water to Disease, and the Cure and Prevention of the Latter.—George Blumer, of Albany, argued that the most common mineral contamination of water was lead. This was dissolved by acid water while passing through lead pipes. Of the diseases due to animal organisms might be mentioned malarial disease and amœbic dysentery, although the cause could not be isolated, and the natural habitat was not known. The evidence of the water-borne origin of malarial disease was not very conclusive. Of diseases due to vegetable organisms might be mentioned typhoid fever, Asiatic cholera, and certain diarrhœal diseases. Although these diseases were not always water-borne, the evidence that they might be so transmitted was conclusive.

Rowland G. Freeman, of New York, said that the greatest danger was from milk contaminated by impure water. It had not been until the publication of the article of Dr. W. A. Kahn, of the Wesleyan University, in 1894, that it had been demonstrated that oysters might prove the means of disseminating typhoid fever. It was now known that the typhoid bacilli would live longer in oyster-juice than in water, and longer in water contaminated by sewage than in clean water.

T. B. Carpenter, of Buffalo, stated that, although as far back as 1839 London had been supplied with water purified by sand filtration, it was only quite recently that the real efficiency of this method had been demonstrated. He cited experiments on this method of purification, showing that 97.58 per cent. of the bacteria were removed. No mechanical filter could be considered efficient unless used in connection with some coagulant, such as alum. As yet but meager reliable data were at hand concerning the efficiency of these mechanical filters, but, so far as our present knowledge went, it was pretty clear that this method possessed superior advantages.

E. K. Dunham, of New York, stated that one of the best methods of preventing the pollution of water was by allowing putrefactive changes to occur in the superficial layers of the soil, in the presence of an abundance of oxygen. When thoroughly carried out, this process should destroy all pathogenic germs, and the method was applicable on a small scale to private country residences, thus doing away with the obnoxious cess-pool.

The Life-history of the Typhoid Bacillus Outside of the Body.—F. C. Curtis, of Albany, said that the typhoid germs remained indefinitely in the soil, but probably did not retain their vitality for many days in sewers, cess-pools, and privy-vaults. These bacilli retained life for a long time in running water, and were not destroyed by freezing. Aërial transmission of the disease was possible only when the germs were taken into the digestive tract.

Typhoid Fever in Children.—W. P. Northrup, of New York, stated that not a single case of typhoid fever had been known to occur among the many thousand children that had been under the care of the New York

Foundling Asylum during twenty-five years, and he had never met with the lesions of this disease in two thousand autopsies made upon children under 3 years of age. Out of four hundred cases of typhoid fever in the epidemic at Stamford, there had been only four among little children.

The Importance, and a Practical Method, of Disinfection of the Excreta of Typhoid Patients.—W. Gilman Thompson, of New York, said that a 1-to-500 solution of corrosive sublimate, rendered acid to prevent precipitation of the mercury as an albuminate, constituted a cheap and powerful disinfectant, but it was objectionable in cities on account of its injurious action on the plumbing. A 10-per-cent. solution of carbolic acid could be substituted. The bed-pan should contain at all times at least a pint of the disinfectant solution, and should be kept covered. After each stool the patient's perineum should be cleansed with a 1-to-2000 corrosive-sublimate solution, and thermometers, rectal tubes, and syringes should receive careful attention, as should also the linen. In the country the stools should be mixed with sawdust, and cremated or buried in a trench four feet deep. The disinfection of the stools should be continued for at least ten days after the temperature had permanently returned to the normal.

William T. Sedgwick, of the Massachusetts State Board of Health, spoke of the danger of bathers and picnickers contaminating water-supplies. He said that the city of Lawrence had furnished an interesting object-lesson regarding the prevention of typhoid fever. Formerly it had had an unusually large number of cases of typhoid fever, but since the installment of a municipal filter in connection with the water-supply the number of cases of typhoid fever had been quite insignificant.

Double Murphy-Button Anastomosis.—J. H. Glass, of Utica, reported a successful case of this kind, in which the obstruction was due to a sarcoma of the colon. In his opinion, no method was so rapid and so certain as that with the Murphy button.

Some Cases of Diseases of the Testicle.—L. B. Bangs, of New York, reported five cases illustrative of difficulties of diagnosis. He said that many cases of neuralgia of the testicle might be due to unsuspected accumulations of pus between the testicle and the cord. In all cases of disease of the testicle in which there was doubt as to the nature of the process one should resort early to exploratory incision.

A Rare Complication of Acute Rheumatism.—Eugene Beach, of Gloversville, reported a case in which orchitis had developed after a man had slept in a damp bed. This was followed by rheumatic pain in the muscles of both legs, and later by mild cystitis and urethritis. Then there was an exacerbation of the orchitis, quickly followed by an attack of acute articular rheumatism. Careful search had failed to show any infection.

Notes of Cases in Suggestive (Hypnotic) Therapeutics.—H. S. Drayton, of New York, reported some cases illustrative of the power of hypnotic suggestion,—a power which he considered to be almost unlimited in many disorders.

William James Morton, of New York, said that a long experience with hypnotism had led him to the belief that it was a pernicious practice, in that it lessened one's power of resistance, and so degraded the patient both morally and intellectually.

Drayton replied that, if such an unfortunate result ensued, it was the fault of the hypnotizer; he was sure his patients would all say that the will had been strengthened by his method of employing hypnotism.

The Management of Club-foot.—A. M. Phelps, of New York, in a few remarks on this subject, said that proper manipulation and gradual supercorrection of the deformity should be begun as soon after birth as the condition was recognized; that where this treatment did not succeed, by the time the infant had reached the age of 3 months, it was best to perform his "open operation"; that where there was actual bone deformity it might be necessary to divide the neck of the astragalus, perform a cuneiform osteotomy on the os calcis, remove the cuboid and scaphoid bones, or even perform Pirogoff's amputation. He said that if the foot were supercorrected the weight of the body subsequently would prevent the tendency to relapse. Out of the five hundred "open operations" that he had done, it had only been necessary to resort to osteotomy seventeen times.

Stricture of the Rectum; its Etiology and Treatment.—Joseph M. Mathews, of Louisville, read a paper with this title, which was, in large part, a reply to certain criticisms that had been published by Dr. Kelsey. He stated that after an experience in the treatment of over three hundred and sixty cases of stricture of the rectum he had come to the conclusion that benign strictures of the rectum were very infrequent. He had not met with a single case in which such a stricture was due to dysentery, and from a pathological stand-point it could not often be the seat of such a stricture. Syphilis, in his opinion, was the cause in about 60 per cent. of the cases.

The Surgical Treatment of Cancer of the Rectum.—Daniel Lewis, of New York, did not consider an operation justifiable unless there was a fair prospect of being able to remove the disease completely. He looked upon the old Volkmann operation as less dangerous, and, therefore, preferable to the Kraske operation. In women he would operate by way of the vagina.

The Proper Method of Treating Internal Hæmorrhoids.—Robert T. Morris, of New York, characterized the method of injecting piles with carbolic acid as very dangerous, because of the liability of septic emboli being carried from the open veins to the liver or heart. The same objection applied to crushing methods. His favorite method of treatment was by excision of the piles and suture of the incisions.

Prolapse of the Rectum.—B. Farquhar Curtis, of New York, referring to the sacral operation, said that the danger consisted not in the resection of the sacrum, but in the fact that the bowel must be attacked high up. In epithelioma of the anus the patient sought treatment early, whereas a ma-

lignant tumor developing two or three inches up the bowel might exist without symptoms for some time, and hence the operation would not be performed until the glands had already become involved. In spite of the extravagant pretensions that had been made for colotomy, it could not be denied that it prolonged life in cases of malignant disease.

James P. Tuttle, of New York, said that he had never seen evidence that had convinced him that stricture of the rectum in syphilitic cases ever occurred without previous syphilitic ulceration. Resection of the rectum was the only safe method of curing connective-tissue strictures. The prognosis in malignant disease depended on the extent to which adjacent organs and tissues were involved, rather than upon the height to which the disease had reached.

Acute Inflammation of the Gall-bladder.—Maurice H. Richardson, of Boston, stated that he had seen only six cases of this condition; yet, in the acute form, the symptoms were so sudden and urgent as to demand immediate operative interference. The pain was not infrequently at some distance from the region of the gall-bladder, and was associated with vomiting, abdominal distension, and fever. The condition was often mistaken for appendicular inflammation. The treatment should consist in free incision and drainage of the gall-bladder. The prognosis was fairly encouraging if an operation were resorted to early.

The Orthopædic Treatment of Spastic Paralysis in Children.—Samuel Ketch expressed the view that patients affected with spastic paralysis were those whose mentality was *nil*, diminished, or normal or nearly so. The treatment should include special education of the muscles. He had never seen any advantage from the use of electricity in any form. The constant current might have a good sedative effect. Massage had but little value in these cases. Mechanical treatment was directed to improvement in locomotion or reduction of deformity, and produced its best effects in patients whose intellects were least impaired and in deformities and disabilities of the lower extremity, especially when the judicious use of the superincumbent weight corrected the elevated and inverted feet. Tenotomy was certainly a useful resort. Opposition to it was based on theoretical grounds and the results in patients who were not proper subjects for operation or whose after-treatment had been neglected. With growth there was a lessening of the spastic element, and the degree in which this had been replaced by a fixed deformity should be considered in undertaking mechanical or operative treatment. Patients in whom the deformity was the result of marked spasm resisted treatment or were liable to relapse. Apparent mental improvement occurred, with better locomotion and general melioration.

Frederick Peterson thought that a great deal could be done by education of the muscles by efforts of the will, by active, not passive, movements, as, for example, using the typewriter or playing the piano in the case of a paralyzed hand.

William M. Leszynsky had seen no benefit from electricity. More could be obtained from efforts of the will. Persistent efforts to walk were

sometimes sufficient to restore the function of the muscles. In cerebral palsy, of course, little could be done.

Reginald H. Sayre has found faradization a good means of giving gymnastic exercises to muscles not under the control of the patient.

After various tenotomies to place the parts in normal relation to each other, we could do a great deal in the way of educating these muscles.

V. P. Gibney argued that in the prevention of these deformities further advance was to be sought in researches into the underlying neurological condition.

H. L. Taylor thought that benefit was to be derived, not only in children, but also in adults, from mechanical treatment and tenotomy. The contraction was not easy to control by braces; it would return when the brace was removed. Tenotomy not only made it possible to retain the foot in position, but had a decided effect upon the spasm. The tendon was cut for the specific purpose of relieving the spasm. A very marked mental improvement followed this treatment.

H. W. Berg observed that, since many of these cases accompanied idiocy, education of the muscles would apply most aptly. The sense of sight should be developed by bright colors, that of hearing by the use of bells, and increased motor ability by repeating certain motions a great number of times. Years of patient toil might thus be well spent. He was rather in favor of galvanism. In the results of meningeal hæmorrhage, education of the muscles was "love's labor lost," and, while tenotomy here had a place, the treatment was radically different from that of patients in whom idiocy accompanied spastic paralysis.

Newton M. Shaffer said that, so long as approximately normal movements could be obtained by passive motion, tenotomy was not needed. In time, however, the spastic contraction became a contracture with permanent deformity. It was only where these changes were observed that tenotomy was indicated, and the operation was then followed by much better results than when it was done at an earlier stage. Radical improvement occurred with growth, as the result of the general changes which occurred every seven years. For these reasons the time at which an operation should be performed was an important question, and a delay of two or three years sometimes secured a distinct advantage, passive exercise being practiced in the meantime, half an hour or an hour each day.

Dr. Peterson said that in these cases the paralysis was not to be considered as the result of the idiocy. Degrees of idiocy, palsy, and epilepsy were all symptoms of cerebral injury received before or during parturition or within two or three years after birth. Idiocy was a symptom often associated with spastic paralysis. In idiots we found sclerosis, atrophy, and cysts, but not hæmorrhage. In spastic paralysis, while we found meningeal hæmorrhage, there were few cases in which deficient development of the brain was found post-mortem. In these cases there was no irritability of the spinal cord, but there were rather exaggerated reflexes from cutting off of inhibition. Mental improvement often followed education of the muscles, but, where it attended any muscular change from contraction to

contracture, it was probably a coincidence. As these muscles did not react so well with the galvanic current, the faradic would give them better exercise. The former often irritated the skin, but children rather liked the latter.

Dr. Ketch said that the benefits of special education of the muscles were best obtained in the schools conducted for the instruction of the feeble-minded.—*New York Medical Journal*, March 13, 1897.

College of Physicians of Philadelphia.

Binasal Hemianopsia.—Clarence A. Veasey reported the case of a woman, aged 54, who had noticed gradual failure of vision for five months, and, two months earlier, slight attacks of nausea and vomiting for three weeks. At the time of the examination there were slight tremor and vertigo. Three weeks before coming under observation the vision suddenly declined in R. to l. p. and in L. to $\frac{1}{180}$. There was no history of syphilis or tumors and no impairment of hearing, speech, or memory. Wernicke's hemianopic pupillary sign was present. Tn. The ophthalmoscope showed a low grade of double neuroretinitis, more marked in R., indicating a long-existing interstitial optic neuritis. The blood and urine were normal. Binasal hemianopsia was the prominent symptom. In the R. the macula was included in the blind half and the line of demarcation between the blind and preserved fields was distinctly vertical. In the L. the macula was included in the preserved half, which expanded in its upper part toward the nasal side. The field for red in the L. was fan-shaped and included the macula, and here the blind portion encroached slightly above and below on the temporal side. Both fields were concentrically contracted. Central vision improved for a short time under treatment, but the fields became more and more concentrically contracted and preserved their hemianopic character. Death ensued within a few months. An autopsy, which was refused, would have probably shown a bilateral inflammation of the trunks of the optic nerves in front of the chiasm extending backward to the chiasm and more marked symmetrically on each side of the latter.

G. E. de Schweinitz had seen several cases. The first, originally described by Dr. H. C. Wood, had faint light-perception in one eye and in the other the field of binasal hemianopsia. The second was a girl of 16, who had symptoms of basilar meningitis, high choked discs, vomiting, nausea and staggering gait, intense headache, and loss of both nasal fields. The third case, a girl of 20, was one of brain-tumor. She also had high choked discs, very imperfect vision, and binasal hemianopsia. After death a large basal tumor was found. The last of the cases is an illustration of the symptom occurring in spinal-cord disease like that reported by Bull and Lang. A miner, 55 years old, a hard drinker, with a specific history, had blanched discs, spastic gait and exaggerated knee-jerks, and binasal hemianopsia. The lesion probably was an interstitial change in front of the chiasms. He is uncertain whether these cases ought to be classed among the hemianopsias or in some other category.

G. C. Harlan states that there was at one time a good deal of discussion of binasal hemianopsia, with reference to its bearing upon the theory of semidecussation in the optic chiasm. It is impossible to explain it by any single lesion and this fact has been alleged as a weak point in the semidecussation theory. Bitemporal hemianopsia can be accounted for by a lesion in front of the chiasm, involving the inner halves of the optic nerves, or behind the chiasm involving the inner halves of the optic tracts; but no single lesion can be so placed as to satisfactorily explain binasal hemianopsia. In preparing a paper on hemianopsia some years ago he was unable to find a detailed account of any case of binasal hemianopsia quite free from complication, and Schoen had stated that there was at that time no entirely incontestable case on record. The speaker believed that this statement still holds good,—that there is no case with similar fields on each side sharply defined by vertical lines of demarcation, such as we meet with in homonymous bilateral hemianopsia.

The Application of the Rœntgen Rays in the Diagnosis of Foreign Bodies in the Vitreous.—G. Oram Ring exhibited two radiographs showing the presence and the approximate location in the vitreous of a piece of metal, and the patient upon whom Mule's operation had been performed. Eighteen months previously a piece of steel had entered the right eye through the cornea, producing a tear in the iris, cataract, and complete blindness. The eye had become subject to attacks of ciliary inflammation, and recently the left eye had shown signs of sympathetic irritation. The steel surrounded by exudate could not be dislodged from its position in the ciliary body by the Hirschberg magnet, and evisceration was performed and the glass sphere inserted. Very little reaction followed.

H. F. Hansell stated that a case he had reported in the discussion in December was exposed for eight minutes, and the skiagraph shows exactly the position of the foreign body in relation to the shadow of the bone; but the picture shown demonstrates what his does not,—namely, that the Rœntgen rays will cast the shadow of a piece of metal lying in any part of the vitreous. This method is extremely valuable and now almost essential in the diagnosis of the presence and composition of foreign bodies.

George Friebis stated that he preferred decidedly evisceration to enucleation when feasible, and was gratified to find that the reaction could be insignificant.

C. A. Oliver stated that it must be remembered that should the vitreous contain blood-clots the magnet must be brought almost in contact with the metal before the latter can be moved from its position; and, again, should the metal, during its passage through the vitreous, fall from the magnet, it may pursue a direction entirely different from that in which it had been carried by the magnet.

Preservation of the Eye, with Good Vision After the Removal of Fragments of Steel from the Vitreous by Means of the Magnet.—Edward Jackson exhibited two cases of this kind. Both patients were young men injured by fragments from hammers. One had been shown to the section shortly after the extraction was done, three years ago. The wound of entrance

through the insertion of the internal rectus muscle was enlarged and an incision made in the vitreous with the Graefe knife in the direction of the foreign body, which lay on the retina at the bottom of the eye. The operation was followed by some detachment of the retina, retinitis, and a general hyalitis. At one time the vision was reduced to counting fingers within one foot, but it slowly improved until now it equals $\frac{1}{5}$ partly, although the pigmentation and exudation in the retina, even in the region of the macula, are quite marked and a slight local detachment exists at the original site of the foreign body.

In the second case the chip of steel entered through the cornea and iris, close to the periphery. Hæmorrhage at first prevented its exact location, and the injury was treated with atropine and ice, locally, and rest in bed. In two days the media were quite clear. The lens, the edge of which could be seen through the coloboma in the iris, entirely escaped injury. The piece of steel was found lying slightly in front of the retina (3 to 4 D.), two disc diameters below the optic nerve. An incision was made between the inferior and internal recti and the foreign body extracted with the magnet. A protruding portion of the vitreous was clipped off. Ten days later the eye with its correcting lens, $+ 3^{s} \bigcirc + 2.75^{c}$, had nearly equal vision with the other, which required a similar glass. At the end of the month there remained some opacities in the vitreous and a marked area of choroidal atrophy in the part adjoining the part from which the foreign body had been removed. This atrophy was distinct ten days after the injury. Vision equal in the two eyes.

Operation for the Cure of Cicatricial Ectropium from Antral Disease.—Dr. Oliver gave the details of such a case. The case was that of a 14-year-old girl who in infancy had had an alveolar abscess in the right upper jaw, followed by the formation of a fistular sinus, which remained open and discharged until she was 9 years old. At the time of examination it was found that the entire inferior orbital margin was lost. The overlying skin and superficial tissues were dragged deeply inward into a series of bands, while the lower lid was so everted that the lower *cul-de-sac* was visible. The operations pursued were those of first freeing the bands subcutaneously by a tenotome introduced far out in the temporal region, followed by three repetitions of Dieffenbach's operation along a Szymanowski cut, and later the excision and filling in by suturing, of a triangular area in the upper temporal region, thus almost entirely relieving the deformity without the appearance of any external cicatrices.

Atropine to Reduce the Tinnitus Aurium Caused by the Use of Quinine.—Dr. Aubert has noted that, in three patients who had formerly suffered from tinnitus aurium due to quinine, the symptoms could, at least, be considerably diminished by adding atropine to the quinine. The amount of atropine prescribed by Dr. Aubert amounted to 0.0005 gramme ($\frac{1}{120}$ grain) daily.—*La Médecine Moderne*, March 24, 1897.

Selections from Reports of Members of the Annual's Staff of Correspondents.

Norway.

DR. F. LEVISON,
REFERENT FOR DEN DANSK LITTERATUR VEDRØRENDE: ALMINDELIG MEDICINSK PATHOLOGI OG THERAPI, FERI INDEFATTET, NERVE- OG SINDSSYGDOMME, PÆDIATRIK, OBSTETRIK, GYNÆKOLOGI, HYGIENE, DEMOGRAPHI, RETSMEDICIN, PATHOLOGISK, ANATOMI, BAKTERIOLOGI.

Alle medicinske Bøger, Disputatser, Monographier, Tidsskrifter etc., der adkomme i Danmark bedes sendt til

DR. LEVISON,
Nørrevoldgade, 13,
København.

Cases of Endothelioma.—Two cases of this affection are described by FRANCIS HARBITZ, one being located in the peritoneal cavity, with infiltration of the mesentery, omentum, etc.; the other had its origin in the membranes of the spinal cord and extended to the cerebellum and the fourth ventricle. The latter tumor grew very rapidly, causing death at the end of two months and a half. The microscopical structure of these tumors is fully and minutely represented by reproductions of microscopical sections.—*Norsk Magazin for Lägeordenskab*, p. 1189, 1896.

Epidemic of Rheumatic Pains.—A. BACKER, in July, 1896, witnessed an epidemic characterized by rheumatic pains of the musculature of the chest and abdomen. The affection developed suddenly with either fixed or fugitive pains, which were increased by the movement of or pressure upon the affected region. There was fever (39° to 39.5° C.—102.4° to 103.2° F.), cephalalgia, uncomfortable sensations in the limbs, but no exanthema. In several cases there was either pleurisy or pericarditis; pneumonia was present in two instances, and in two others there was orchitis. The duration of the disease was from three to six days, but relapses occurred frequently. Four hundred and seventy cases were reported to the physicians, but many cases escaped the notice of the authorities. On several farms all work had to be suspended, all the hands being ill. No deaths were reported. A similar epidemic was described in 1872 by Dr. Daae, of Norway.—*Norsk Magazin for Lägeordenskab*, p. 1234, 1896.

Local Asphyxia with Functional Brain Disturbance.—A singular case of local asphyxia, accompanied by functional disturbances of the brain, is described by AXEL JOHANNESEN. A male child, about 16 months old, became, without any apparent cause, very irritable and restless. At the end of two months both feet swelled and felt cold. There was a bluish-red eruption which caused severe itching. The feet were covered with nodosities. The same condition then affected the hands, followed by desquamation of the soles of the feet and palms of the hands. At the same time the child forgot how to speak, and expressed himself solely by grunts and cries. After four or five months the irritation and desquamation ceased, the child became quieter and again began to speak; he gradually gained strength and his former gayety returned. Complete recovery only took place about fourteen months after the beginning of the affection. The author explains this unusual case by special vasomotor disturbances due to morbid cerebral modifications. Two analogous cases have been observed in Norway by Dr. Boeck.—*Norsk Magazin for Lägeordenskab*, p. 1, 1897.

Herpes Zoster.—OLAF FRICH observed in a man, 75 years old, a typical case of herpes zoster, affecting the entire right side of the neck and face, corresponding with the lower region of the cervical plexus. After ten days of suffering total paralysis of the right facial nerve suddenly set in. The pain and the paralysis gradually diminished, and finally disappeared after from two to three weeks treatment by the galvanic current.—*Norsk Magazin for Lägeordenskab*, p. 1125, 1896.

Periodical Paroxysms of Hiccough.—S. FEILBERG describes the case of a man, 42 years old, who suffered for several months from periodical paroxysms of hiccough, which entirely prevented his working and caused considerable suffering. After having searched in vain for the cause of the hiccough, the author finally found, at the base of the tongue, a tumor having three lobes, of which the central one, the largest, was about the size of a hazel-nut. These growths were due to a pronounced hypertrophy of the adenoid tissue at the base of the tongue, which caused, in addition to the hiccough, a continual sensation of fullness in the throat. There was also enlargement of the palatal tonsils, which were excised without producing any noticeable improvement. Ablation of the central lobe of the lingual tonsil caused considerable amelioration of the hiccough, which ceased entirely after the extirpation of the lateral lobes.—*Norsk Magazin for Lägeordenskab*, p. 1130, 1896.

Influence of Concomitant Disorders on the Diphtheria Bacillus.—FABER states that after diphtheria the bacilli successively become scarcer during convalescence; but, when a new disease—for instance, scarlatina—sets in, the bacilli of diphtheria often disappear suddenly. As diphtheria may complicate scarlatina, there can be no antagonism between the specific microbes of these two diseases, but probably the sudden disappearance of the diphtheria bacillus is due to an antagonistic effect of the streptococci, which so commonly are found in the throat in scarlatina.—*Hospitals-Tidende*, p. 1083, 1896.

Coloring-matter of Bile in the Urine.—M. RASMUSSEN recommends a new method to demonstrate the presence of the coloring-matter of the bile in the urine. One cubic centimetre of urine is mixed with as much ether and the mixture is well shaken with four to six minims of spirituous solution of iodine. The liquid then forms two strata; above is the ether with the iodine, and below the urine, which remains unchanged when no bile is present, but takes a brilliant green color when bilivirdin is present.—*Hospitals-Tidende*, p. 1200, 1896.

Experiments Concerning the Diphtheric Poison.—TH MADSEN has made a series of beautiful and careful experiments in the laboratory of the University of Copenhagen regarding the production and evaluation of the antidiphtheric serum.

It is not easy to secure a constant production of the diphtheria toxin; although Madsen employed a very toxic species of the bacillus diphthericus, originating from the Pasteur Institute, the cultures in bouillon gave very different results. Sometimes the culture was acid and atoxic, sometimes it

was alkaline and toxic, or also atoxic. These variations occurred without any known reason. The author, finding that the passage of air over the cultures was of no advantage, succeeded better by adding carbonate of calcium to the cultures in order to make them alkaline; nevertheless the result could not be accurately foretold. The toxin can be precipitated by the aid of sulphate of ammonium. Madsen measures the force of the anti-diphtheric serum in the same manner as the Germans, and gives a detailed description of the numerous experiments made in order to compare this method with that of the French. He found that, when toxins from different laboratories are employed to test the serum, the result is different, even when the lethal minimum dose of the toxin is accurately determined. A serum, which is calculated in one laboratory to be 100 units, may in another laboratory, where the toxin is different, only reach the force of 30 units.

Madsen therefore proposes to calculate the force of the toxin indirectly,—*i.e.*, by comparing it with the force of a standard serum. By the injection of 0.001 cubic centimetre ($\frac{1}{64}$ minim) of Höchst serum a guinea-pig is immunized against 10 × the minimum lethal dose of Ehrlich's toxin. When ten or twenty guinea-pigs receive each an injection of 0.001 cubic centimetre of Höchst serum, and different amounts of toxin from another laboratory, it will be possible to calculate the exact dose of toxin which is equivalent to the dose of the German toxin by which the Höchst serum has been tested. The Danish serum is of greater force than the French.—*Dissertation*, Copenhagen, 1896.

The Application of the Concentrated Chemical Rays of Light to Medical Use.—FINSEN, the well-known inventor of the "red-chamber" treatment of variola, has given the first account of the work done in his new institute for treatment by the chemical rays of light. The light employed is the sun-light, or, when this is failing, the light of powerful electric lamps, which is condensed by lenses of glass, or, better, by the so-called water-lenses. The red, warming rays are held back by a weak solution of methylene-blue and only the chemical rays are allowed to pass. Now, Finsen has found by his experiments that different microbes—the micrococcus prodigiosus, for instance—are killed by an exposure of from five to seven minutes to the concentrated chemical rays; the rays can easily make their way through the skin, but, as they are absorbed by the hæmoglobin, it is necessary to make the tissues anæmic by pressure in order to ascertain the effect of the rays on diseases of the skin caused by microbes. By this treatment there always ensues some irritation, redness, and œdema of the skin, and, when the exposure of the skin is continued too long, superficial necrosis of the skin may result.

A series of patients suffering from lupus have been treated in this manner, and in all cases there has been a considerable improvement, the treated portions of the skin recovering quite a natural appearance. But, as only small portions of skin can be treated during each *séance*, the treatment is long and tedious, and the author has, as yet, no complete recovery to report.—*Monograph*, Copenhagen, 1896.

Clinical Notes and Therapeutic Suggestions.

The Treatment of Plague by Serum.—That the best curative treatment is to be found in the inoculation of the special serum was demonstrated in a paper which M. Roux, of the Institut Pasteur, has just read before the Académie de Médecine of Paris. Yersin's treatment only failed in two cases out of twenty-six, and, in spite of the small number of cases to which the method has been applied, the results are very conclusive if we consider that the plague is the most fatal of human diseases, and that its death-rate is not less than 80 per cent. Yersin was able to make the test to which we have just referred with a few tubes of serum taken from a mare that had been immunized at his laboratory at Nha-trang, and with eighty tubes sent to him from the Institut Pasteur, at Paris, and taken from a horse which he himself had immunized and which had been kept there.

The serum sent from Paris, found preventive in mice at a dose of $\frac{1}{10}$ cubic centimetre (1.5 minims) for 20 grammes (5 drachms), had first been sent to Nha-trang, whence Yersin had carried it to Hong Kong, thence to Canton and to Amoy; but in spite of all this traveling during hot weather it had kept its curative properties. This is a very interesting fact, as it shows that the serum can be sent to the most distant countries.

As the plague is very rapid in its evolution, death often occurring in three or four days, not a moment should be lost in treating it; the sooner the injection is made, the easier it will be cured. This is clearly shown by the twenty-three cases treated by Yersin at Amoy; six were in the first day of the disease, and all recovered in from twelve to twenty-four hours without suppuration of the buboes, with injections of 20 to 30 cubic centimetres (5 to $7\frac{1}{2}$ drachms) of serum. Six were in the second day and recovery was slower; 30 to 50 cubic centimetres ($7\frac{1}{2}$ to $12\frac{1}{2}$ drachms) of serum were required, but all the cases recovered in three or four days without suppuration of the buboes. Four were in the third day, and the fever continued for a day or two after the injections were commenced. Recovery was slower, and the buboes suppurated in two cases, in spite of doses of 40 to 60 cubic centimetres (10 to 15 drachms) of serum. Four were in the fifth day, of whom two died, but their condition was a desperate one when the treatment was begun. The two others recovered, but from 60 to 90 cubic centimetres (15 to $22\frac{1}{2}$ drachms) were necessary.

M. Roux states that it is truly surprising to see the most alarming symptoms disappear in a few hours when the serum is given in the first two days of the disease. The buboes melt, so to speak, before your eyes; if, however, the treatment is begun at a later date, the amount of serum required is greater and suppuration of the buboes cannot always be avoided. Still, in such cases the suppuration, instead of lasting a long time, as in the cases when the plague gets well spontaneously, dries up in a few days. A proof of the efficacy of the serum is the rapid and complete recovery of the patients, whereas, otherwise, the convalescence is long and troublesome, even when the case has been a light one. The serum fails when the disease is too far advanced.

Hitherto the serum has only been used in confirmed cases of the dis-

ease, but from what has been seen in animals it will be an easier matter to prevent the plague than to cure it. It is, therefore, indicated, when a case of plague appears in a house, to make preventive injection for all the persons who have been exposed to contagion. Yersin thinks that this will be the most efficacious way of preventing the disease from spreading, and experiments now being carried out on animals will show how long the immunity thus given will last. In any case, Yersin proposes to test these preventive injections as soon as he is in possession of a sufficient amount of serum to open a new campaign.—*Bulletin de l'Académie de Médecine*, March, 1897.

Cocaine and Ichthyol in the Treatment of Fissure of the Anus.—M. Jules Chéron has always obtained good results by means of the following treatment: The anus being partly opened and the fissure discovered, a small tampon of absorbent cotton saturated with a 1-per-cent. solution of cocaine hydrochlorate is applied. At the end of five minutes local anæsthesia is obtained and the fissure can then be touched with pure ichthyol. This procedure is renewed on the following days. After the fourth or fifth application the tampon of cocaine is introduced as far as the internal sphincter, and at the end of five minutes it is possible to make a slight dilatation of the anus with Nélaton's dilator. In this way the fissure is distinctly exposed to view and can be thoroughly touched with ichthyol. The dilatation is more easily affected as cicatrization advances and it may gradually be increased until the disappearance of stricture of the sphincter, which so frequently complicates fissures of long standing, is an accomplished fact. Recent fissures may be cured by ten applications of this treatment, but old fissures, the borders of which are more or less callous, require a longer time for recovery; it is rarely necessary, however, to make more than twenty applications.—*Gazette de Gynécologie*, February 1, 1897.

The Pathology of Missed Abortion.—Dr. G. W. E. Fothergill states that, when the fœtal circulation ceases, the vessels of the placenta are rapidly obliterated. The fœtal epithelium covering the chorion and its villi degenerate, and the maternal blood between the villi forms clots, which are altered into dense laminated fibrin. The decidual cells then multiply and invade the fibrin, which they gradually replace, filling the intervillous space with layers and bands of decidual tissue. At the same time they disintegrate the fœtal epithelium, which come to be represented by scattered heaps and rows of nuclei, and finally disappear. The amnion remains almost unaltered, but adheres closely to the chorion, and the united membranes are thrown into folds and convolutions, covering the rounded lobes of altered placental tissue. The fœtal portion of the placenta does not grow after the death of the fœtus, though the maternal portion containing the decidual cells remains active. It is therefore improbable that malignant new growths can arise from fœtal placental elements.—*British Medical Journal*, March 20, 1897.

The Best Method of Employing Oil of Gaultheria in the Treatment of Rheumatic Affections.—An editorial writer in the February number of the

Therapeutic Gazette calls attention to the value of this drug in rheumatic affections. It has been found that the large percentage of salicylate of methyl contained in it exercises a very positive influence for good in cases of rheumatism which are usually benefited by other salicylates; and, further, that its physiological action is practically identical with theirs. Further experience, however, while it has supported the view that it exercises a beneficial influence in rheumatism, shows that it disorders the digestion quite as frequently as the other salicylates, and for this reason it has not become particularly popular. There are some patients who, after taking both remedies, much prefer the salicylate of sodium or salicylic acid to the oil. It has, however, been recognized as a fact, for a number of years, that the volatility of the oil of gaultheria renders it easy of absorption by the skin and by the respiratory mucous membrane. Quite ten years ago, the writer goes on to say, Randolph showed that, if oil of gaultheria were placed on a sponge, which in turn was placed in an inhaler, in a very short time the reaction of salicyluric acid could be obtained in the urine upon the addition of perchloride of iron, proving that the drug was rapidly absorbed from the respiratory mucous membrane and promptly eliminated. He also found that the use of oil of gaultheria in an ointment applied externally resulted in its absorption and in the appearance of a characteristic reaction in the urinary secretion.

In the *Lyon médical* for September 20, 1896, Lannois and Linossier, after recalling the fact that they demonstrated the absorbability of the salicylate of methyl through the skin, in the early part of this year, before the Academy of Medicine in Paris, record 24 cases of various forms of rheumatic affections in which they treated the patients by the external application of this drug, and their results are such as to encourage them to continue this treatment, although it is noteworthy that in the majority of their cases the conditions were not such as are generally most favorable for the administration of the salicylates. Thus only 4 patients in the 24 suffered from acute articular rheumatism; in 11 the rheumatism was articular, but subacute; in 7 it was chronic and associated with deformity; and in 2 the rheumatism was gonorrhœal. Curiously enough, says the writer, they assert that in both these last cases this treatment did good, although it is the universal experience of the profession that, as gonorrhœal rheumatism is septic in origin and not due to the ordinary causes of rheumatic affections, the salicylates are perfectly useless.

The method which they have followed in the application of the oil is as follows: The part which is affected is surrounded with lint which has been moistened by the application of one or two teaspoonfuls of the oil; this is then covered with a sheet of gutta-percha, and the entire limb carefully wrapped in an outside bandage, which is applied in such a way as to prevent the heat of the body from vaporizing the drug and permitting it to escape into the air, while the bandage also softens the skin and in that way aids in the absorption of the remedy. Under these circumstances these clinicians maintain that the pain is rapidly relieved, that the swelling decreases, and, as an evidence of the physiological action of the drug, that headache,

or fullness of the head, with throbbing of the ears, and other characteristic symptoms of cinchonism, speedily appear; further, that in the course of so short a time as half an hour the salicyluric acid reaction may be obtained in the urine. In the course of eight or nine hours the greater quantity of the salicylate of methyl which has been applied to the limb is absorbed and eliminated, total elimination being accomplished in twenty-four hours and relief of the symptoms produced usually earlier than eight hours; the temperature also falls, and the general condition of the patient markedly improves.

Locally, this treatment may produce reddening of the skin, and, if it is continued for some time, actual desquamation of the cuticle; but this is not painful, since anæsthesia is developed in much the same way as follows the application of guaiacol.—*New York Medical Journal*, March 6, 1897.

A Case of Reunion of Tendon Nearly Five Years After its Division, with Good Result.—R. Carmichael Worsley, of Ramsgate, reports the following interesting case: L. B., a cook, in 1890, when aged 30, broke a window and cut her right wrist badly. The wound was six weeks in healing, some fragments of glass working out. The thumb, index finger, and middle finger afterward became firmly flexed into the palm. A year after the accident, the tendons of the index and middle fingers were cut down upon and reunited by suture, with good result, after long extension on splints; the extension movements of the index finger, however, remained weak and imperfect. In December, 1895, the thumb was strongly adducted and flexed into the palm. The extensor primi internodii and extensor ossis metacarpi pollicis had escaped division, but the extensor secundi internodii pollicis had been cut, and its retracted ends could be obscurely felt in the scar-tissue on the radial side of the wrist.

On January 16, 1896, the author cut down on the scar, having made the limb bloodless, and found the ends of the tendon separated by one and one-half inches of fibrous tissue traversing the scar. This band contained in its centre some gelatinous-looking substance, which, on microscopical examination, proved to consist of a few genuine tendon-bundles running through the fibrous material. It was impossible to bring the ends of the true tendon together without splitting them, and as the operator was anxious to obtain strong union he excised an inch only of the fibrous band, and brought the ends together with one stout and two fine silk sutures. Rigid antisepsis was aimed at, and the forearm and hand placed upon a splint, with the thumb overextended on a wire arm. The wound healed by first intention. There was very severe pain for a long time up the forearm and arm, owing to stretching of the flexors, which had been so long contracted. This pain had prevented my practicing any continuous extension preliminary to operation. Morphine gave but little relief, and insomnia was troublesome. After a week very gentle passive movement was begun and kept up daily for a minute or two, the thumb being kept overextended on the splint. On the nineteenth day a new splint was applied, fitting the radial side of the forearm, and fixing the thumb out, while the fingers had freedom, and the patient was able to do her work. In three weeks from the operation she

was able to perform feeble extension of the thumb, but flexion took place if it were left off the splint. The constant current was now applied to the muscle for ten minutes daily (15 cells Leclanché).

Three months after operation the thumb became loosened from the splint in the night, and contracted toward the palm, but not to the former extent. It was secured and always kept on the splint except when exercised and galvanized daily.

Till June, 1896, improvement continued, though slowly. If the bandage were taken off the thumb became flexed and adducted to beyond the line of the index finger. Movement in the direction of extension was stronger, however. There was still some pain in the forearm.

In October the patient could leave off the splint for fifteen to twenty minutes, and use the thumb a little. She was advised to take the splint off frequently and exercise the muscles. The current from ten cells was used. On October 27th the patient wrote a letter, using the thumb. On November 1st the splint was off for three-fourths of an hour, and she had a light steel spring attached to the thumb, riveted to a leather wrist-strap, which exerted a pull equal to three ounces. The tendon could be distinctly felt, with some thickening at the site of union. Since the operation the extensor indicis is much stronger, which he attributes to the disturbance of the adhesions throughout the old scar which then occurred.

At the time of writing—November, 1896—the thumb was practically, except for a little weakness, as good as the other one, and the patient will very soon, he hopes, be able to dispense with all artificial support.

This case is worth recording in view of the long time that had elapsed since the division of the tendon, and the resulting confirmed deformity, which had induced more than one surgeon to advocate an amputation. The ultimate good result was attributed to: 1. Early passive movement, very limited in extent, and gentle, not enough to disturb union of the tendon, but sufficient to prevent its adhesion to the scar-tissue, there being no tendon-sheath present. 2. Perseverance in overextension of the thumb on splints, to overcome the action of the long-contracted flexor muscles. 3. Daily application of the constant current to the extensors of the thumb, long disused, and persistence in active exercises of the same muscles.—*British Medical Journal*, March 20, 1897.

A Report of Cases of Sun-stroke During the Summer of 1896.—The cases under consideration, reported by N. R. Norton, of New York, occurred in the wards of the Presbyterian Hospital, in the service of Dr. J. P. Thornley. During six days, from August 8th to 13th, inclusive, about 110 persons were brought to the hospital suffering from the excessive heat. In the mild cases cold water was given, with which they sponged their heads and chest, and they were kept in a cool room and left the hospital in from fifteen minutes to twelve hours. The severer cases, with a temperature of 104° F. (40° C.) or over, numbered 61, with 9 deaths,—a mortality of $14\frac{3}{4}$ per cent. In these hydrotherapy and skilled and careful nursing were the chief factors; the very frequent recording of the temperature enabling the baths to be given at the earliest and, therefore, most valuable time; the

use of the ice tub-bath, with constant and general friction of the entire surface, thus reducing the temperature in the shortest possible time, and being stimulating rather than depressing; the use of the same bath for all severe secondary elevations of temperature, and for the minor elevations sponge-baths of ice-water or of water at from 70° to 80° F. (21.1° to 26.7° C.), depending upon the individual case; and the repetition of these baths whenever the temperature is high enough to make them seem advisable.

All other means seemed entirely inadequate.

The severity of the epidemic, the large number of cases occurring in so short a time, and the crowding consequent to such an emergency make the low death-rate of 9 in 61 cases (11 not tabulated), or 14¾ per cent., extremely gratifying.

In this hospital, from August, 1888, to April, 1896, there were 22 cases of insolation with temperatures corresponding to the arbitrary standards adopted above, with 9 deaths,—a mortality of 41 per cent. At the Pennsylvania Hospital, in the summer of 1887, there were 31 cases, with 12 deaths,—a mortality of 35 per cent. A report by Swift, of 150 cases, records 78 deaths,—a mortality of 52 per cent.

A comparison of these records shows the importance of noting, if possible, any points in the treatment of cases in the epidemic of the past summer which could, in any way, account for the marked difference in mortality.—*New York Medical Journal*, March 6, 1897.

The Action of Antitoxin.—Ehrlich (*Fortschritte der Medicin*, January, 1897) considers that the action of antitoxins might be more usefully studied by test-tube experiments than by experiments with the complex living organism. The action of diphtheria antitoxin was regarded at first as a destruction of the poison, but this is disproved by the fact that in a "physiologically neutral" mixture of toxin and antitoxin these two constituents are found to be present unaltered. Two other views have been advanced: (1) that the toxin and antitoxin form a sort of combination which lacks the property of fixation in the tissues, and therefore the toxic effect is lost; (2) that the action of antitoxin is indirect,—that is, it acts on the living cells and in some way renders them immune to the action of the toxin. Ehrlich has made some experiments with ricin, the toxalbumin of *Ricinus communis*, which Kobert has shown to produce a peculiar coagulation of the blood, whether in the living body or outside. Immunity to the action of this toxalbumin can be obtained in certain animals by formation of an antiricin. The coagulation is proved to be a purely chemical phenomenon, not a vital reaction. A mixture was made of 5 cubic centimetres of rabbit's blood in 95 cubic centimetres of weak solution of sodium chloride, with a little sodium citrate; on adding to this mixture 1 cubic centimetre of a 2-per-cent. ricin solution coagulation occurred at once. On adding antiricin in increasing quantities, starting with 0.3 cubic centimetre, together with the ricin, coagulation is delayed slightly or considerably or prevented altogether, according to the amount of antiricin added. To make the analogy between this phenomenon and the action of diphtheria antitoxin more complete, mice were injected with ricin combined with various doses

of antiricin, and it was found that the effects of the ricin could be regulated from a fatal result to complete absence of symptoms according to the amount of antiricin injected. These experiments would favor the view that the action of diphtheria antitoxin is a purely chemical, not a vital, operation. —*British Medical Journal*, March 20, 1897.

Peronine in the Treatment of Cough in Phthisis.—Dr. C. Schröder has compared the value of this salt—an hydrochloride of the benzyl-ether of morphine—with that of codeine phosphate in the treatment of obstinate phthisical cough, and concludes that it occupies an intermediate position between codeine and morphine. He used it in 12 cases in doses of from $\frac{1}{3}$ to $\frac{2}{3}$ grain (0.02 to 0.04 gramme). In 8 cases it caused a notable diminution of the cough, in 2 cases larger doses were required, and in 2 others it failed completely. Prescribed in doses as large as $1\frac{1}{4}$ grains (0.08 gramme), however, it did no harm; in larger amounts it seemed to provoke nausea and have a decided constipating effect. In 2 cases sweating and difficulty of expectoration were noted; but in all the cases it produced a calmer sleep than that obtained with codeine.—*Gazette Hebdomadaire de Médecine et de Chirurgie*, February 14, 1897.

Search for the Germ of Seborrhœic Eczema.—Wm. H. Merrill, of Pepperell, Mass., gives the result of a series of experiments, and concludes that seborrhœic eczema is caused by a specific germ or germs, in form diplococci, whose life-history is most active at the ordinary temperatures and with free access to the air, but which can develop at much higher or lower temperatures and with a scarcity of oxygen,—a germ having the characteristics which one would most naturally expect in a disease as prevalent and widespread as seborrhœic eczema.—*New York Medical Journal*, March 6, 1897.

Hysterical Hæmoptysis.—Strumpell (*Monatsschr. für Unfallheilkunde*, No. 1, 1897) records a case of hysterical hæmoptysis after fracture of two ribs in a man. Three days after the accident the patient spat up some blood, and for the next three months did not leave his bed. He complained of frequent pain in the injured side, with cough and bloody expectoration. His expression was that of a melancholy hypochondriac. The cough was slight, but almost continual, and had an artificial sound, as if produced by an effort for the occasion. The surface of the soft palate was stippled with tiny hæmorrhagic spots; the larynx was normal. About 15 to 30 cubic centimetres of blood-stained expectoration accumulated daily in the spittoon; it consisted chiefly of mucus containing a few white and red blood-corpuscles, which gave it a pale-reddish color, much paler than that of "rusty" sputum; there was only a trace of pus and no tubercle bacillus. The lungs and other organs were normal. There was much complaint of headache and drowsiness and other neurasthenic troubles. Treatment directed especially to the psychical condition was followed by improvement. Strümpell considers that such cases are not sufficiently recognized. The expectoration is almost always from the mouth, or pharynx, or neighboring parts, and may be distinguished from true hæmoptysis by the far

smaller amount of blood in it, the absence of pus-elements, and the large amount of squamous epithelium, leptothrix, and food remains present. The blood expectorated is to be attributed to the mechanical injury to the mucous membrane from the continual cough. Such hysterical hæmoptysis occurs also apart from trauma in persons of hysterical or hypochondriacal temperament.—*British Medical Journal*, March 20, 1897.

The Bacillus of Friedlander in Pharyngitis and Tonsillitis.—W. C. C. Pakes, of London, studied this subject in the laboratory of Guy's Hospital. Nicolle and Hébert had already published an account of the occurrence of the pneumobacillus of Friedlander on the throat of patients suffering from tonsillitis, follicular tonsillitis, or membranous pharyngitis. Upward of 1600 serum-tubes inoculated from the throats of patients were examined by them, and they found the pneumobacillus of Friedlander eight times, six times alone. Since November, 1894, upward of 500 serum tubes inoculated from the throats of patients in the wards, or out-patients, of Guy's Hospital have been examined. In five cases the author found the bacillus of Friedlander; twice it was found on the surface of the serum in pure cultivation, twice in association with the Klebs-Lœffler bacillus, and once with the staphylococcus aureus.

In each of the three cases which were not pure on the serum he succeeded in obtaining pure cultures on the second subcultivation by inoculating three agar-tubes from the once-inoculated platinum spatula. The morphological characters which they exhibited were

1. Non-motility.
2. Polymorphism.
3. Decoloration when stained by Gram's method.
4. The presence of a well-developed capsule, especially when taken from the heart-blood of the inoculated mice after death.

The cultural characters were as follow:—

1. Whitish, semitranslucent, sticky growth in bouillon.
2. Aërobic and anaërobic growth in gelatin, causing no liquefaction.
3. Whitish, moist, raised growth on slanted gelatin, the growth slipping to the bottom of the tube after four or five days.
4. Abundant gas production in glucose gelatin shake cultivation.
5. Slimy and almost transparent growth on agar and blood-serum.
6. Formation of acid in dilute lactose bouillon.
7. Coagulation of milk with an acid reaction (in four cases before the ninth day; in one case on the eleventh day).
8. Brownish abundant growth on potato.

Pathogenicity.—Mice were inoculated at the root of the tail with a small quantity of a young agar-culture from each case. In two cases the mice were dead on the second morning; in the other three cases they were dead on the third morning. The typical capsulated bacilli were found in the heart-blood and spleen of each mouse, and from the heart-blood pure cultures were recovered.

The patients were all attending at the out-patient department of Guy's Hospital, and, although three of them promised to come again in about a fortnight, not one of them came.

Cases I and *II* were both children. There were small yellowish plugs on both tonsils, which were spreading toward one another. Klebs-Lœffler bacilli were found in conjunction with the bacillus of Friedlander. The children were sent to a fever hospital and were lost sight of.

Case III.—A man, aged 30, complained of a sore throat, which he had noticed for a few days. The fauces were red and the tonsils red and swollen; there was a slight colorless exudation on both sides of the fauces. There was no constitutional disturbance, and the patient said that he felt perfectly well except for the sore throat. The cultivation on coagulated blood-serum was a pure one of Friedlander's bacillus. On the following day the throat had the same appearance, and the second cultivation again proved to be a pure one of the same bacillus.

Case IV.—A man, aged 20, complained of a sore throat, which he had noticed for about a week. The fauces were red and injected, and there were two or three whitish plugs over the crypts of the tonsils, but no sign of membrane. The culture on blood-serum was found to consist of the bacillus of Friedlander and staphylococcus aureus. Two days later the throat was still inflamed, but less sore. A second cultivation revealed the presence of the same two organisms.

Case V.—A girl, aged 6, was brought to the hospital because she had a sore throat. The tonsils were red and swollen, and a few plugs of whitish material were present. The temperature was 100° F. (37.7° C.). A pure cultivation of Friedlander's bacillus was found on the blood-serum. No further observation was made.—*British Medical Journal*, March 26, 1897.

Venereal Diseases in the British Army.—The condition of the British troops in Hindoostan was made the subject of a report by the Secretary of State for India, and an appalling document it truly is. From 1890 to 1892 a cantonment act was in force, which was abolished in 1893. During the earlier years there was a steady and even rapid decline in admissions to hospital; after 1893 there was an equally steady and rapid increase. The highest recorded figure of incapacitated men was reached in 1895, when 522.3 men per 1000 strength, or 536.8 per 1000 of troops in cantonments were in hospital. Among 5882 men detailed for field service with the Chitral Relief Force, 462, or nearly 8 per cent., had to be rejected owing to disease; 279 more, or an additional 4½ per cent., had to be transferred from the field-hospitals to the base. According to this ratio, 8880 men out of a total force of 71,031 British soldiers in India would have to be put down as useless.

How many of these men when they return from India communicate infection to the civil population at home it is impossible to estimate. Perhaps some inkling of the truth in an inverse fashion may be gathered from the fact that in 1894 it was discovered that only 37 per cent. had never suffered at all either in or out of India.

It is known that among the majority of European armies special regulations are enforced in combating disease. The British army in India is an exception. The ratio per 1000 strength of men incapacitated in the German army is 27.3; in the Russian, 43; in the French, 43.8. In the British army it is 203.7 at home and 438.1 in India! Comment is superfluous.

This deplorable state of things does not appear to be attributable to general causes, but to venereal diseases alone. Drunkenness and crime have greatly diminished. More care than ever is taken of soldiers in the way of recreation, cleanliness, and the encouragement of athletic and manly sports. The fact remains that among a body of men, mostly very young, and nearly all obliged by the condition of the service to remain unmarried, only a few can resist such temptations as are offered to them.

It appears that numbers equal to a brigade of infantry are constantly non-effective through venereal disease in the force of 70,000 men in India. That is the direct effect; but the indirect—that is, the abrogation of sanitary regulations—is much worse, nay, even incalculable, for many ailments causing invaliding, and even death, although not classified under venereal diseases, nevertheless spring from them. The shocking constitutional deterioration and breakdown under venereal taint which medical officers in India witness fill them with mingled pity and disgust that such things should be permitted by really humane men.

To sum up losses and gains under this so-called moral, but really cruel, crusade: 1. Prostitution greater than ever. 2. Virulence of disease much increased. 3. Direct inefficiency alarming; indirect, incalculable. 4. Taint spread at home by returned time-expired men. 5 Soldiers' morals not elevated by fear of venereal diseases. 6. Moral gain absolutely *nil*. 7. Physical suffering wantonly aggravated.—*Medical Herald*.

Chemical Examination of Children's Milk.—Chasovnikoff has examined children's milk, which accumulates—as is known—in the mammary glands of the newborn of both sexes during the first months of life, and flows out on pressure. The author found that, qualitatively, children's milk contains the same component parts as women's milk and colostrum, but that it differs considerably quantitively. It contains more water and salts, and less albumin, sugar, and fat. Qualitatively it comes nearest to donkeys' milk.—*Transactions of the Physiological Institute of Moscow University*, vol. v, No. 1, 1897.

☞ *Any journals, exchanges, reprints, monographs, or books not sent directly to the editorial office, 28 rue de Madrid, Paris, will not receive attention either in the "Annual" or the "Universal Medical Journal."*

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(End of Editorial Department of Journal for April, 1897.)

GUDE'S PEPTO-MANGAN.

The treatment of wasting diseases is everywhere being carefully studied by the ablest members of the medical profession. When climatic influences are all that could be expected and the general associations of the patients are reasonably pleasant, it is fair to presume that the effects of drug action can be more accurately gauged than when associated with less favorable conditions. Dr. Karl von Ruck, director of Winyah Sanitarium of Asheville, N. C., has had great opportunities for the study of anæmic conditions. In a long article published in the *New York Medical Journal* he has shown, by mathematical competition, the results obtained by the administration of "Gude's Pepto-Mangan" in the various forms of anæmia, associated with gastric catarrh, tuberculosis, etc.

Dr. Ruck unhesitatingly admits that he has had such unsatisfactory results from the administration of iron that he had practically abandoned its use until he reluctantly undertook the administration of Pepto-Mangan, which he found to be palatable and readily taken by his patients. In only two cases has he found it necessary to discontinue its use on account of the objectionable features associated with its administration, and these were cases of tubercular ulceration of the epiglottis. In all other cases the remedy was well borne by the stomach and no unpleasant after-effects were observed. After using this remedy with upward of seventy patients, all sources of possible error being carefully excluded, Dr. Ruck feels justified in warmly endorsing it.

He has prepared a table showing the number of blood-corpuscles gained under this treatment, in one instance reaching as high as 46 per cent. In view of the fact that all physicians recognize the difficulty in securing desirable results from the administration of iron, these thoroughly scientific demonstrations should be carefully considered. Careless prescribing in cases where the results of the contest are so vital is certainly reprehensible. It would seem, therefore, that a safe rule for general practitioners would be to use a preparation which had proved its efficacy so thoroughly, under circumstances where it was possible to scientifically estimate its value, instead of the prescription of the medicants in which the element of chance enters to a greater or less degree.

MEDICATION IN THE GOUTY AND RHEUMATIC DIATHESES.

Dr. George W. Tobias, of New York, gives the histories of several cases of rheumatism and gout successfully treated by Colchi-sal. He says: "In all cases I have found that that derived from carbolic acid and CO_2 is vastly inferior to the salicylate existing as salicylate of methyl in the sweet birch. An elegant and perfectly safe preparation of the above drugs, and one which, in my hands, has never yet failed me, is Colchi-sal (Colchicein methyl-salicylate). This drug is dispensed in capsules of 20 centigrammes, and each contains exactly $\frac{1}{4}$ milligramme of the active principle of colchicum. In all my cases no excessive catharsis or untoward effects were noticeable. The agents for the sale of Colchi-sal are E. Fougera & Co., 26 to 30 North William Street, New York.

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FRANCE.

ACADEMY OF SCIENCES.

On the Physiological and Pathological Action of the X-rays.—DR. SOREL, alluding to the superficial lesions caused by the x-rays, reported the following case: On September 29, 1896, a young girl, 16 years old, was exposed to the action of a Pollardeau tube, connected with a coil giving a spark of about ten centimetres. The tube was placed over the epigastric region, close to the skin (one centimetre), from which it was separated by a thin leaf of celluloid. The sitting lasted about three-fourths of an hour, with intervals of rest, giving a total exposure of about twenty minutes.

The result, as far as the radiograph went, was *nil;* the duration of the exposure of the plate behind a region so opaque as the abdomen, having been insufficient to cause an impression upon it.

Six days later (October 5th) a red spot six centimetres in diameter, with a white center two centimetres in diameter was observed on that portion of the abdomen which had been exposed to the tube. It was slightly painful to the touch. Eight days later (October 12th) deep and rather acute pains were experienced and the medical man called in ordered the application of a menthol ointment. This was followed by a rather profuse suppuration lasting a month (October 12th to November 12th).

Until then the pains were not at all excessive. Simultaneously, however, a similar spot occurred on the leg, somewhat above the ankle; it was of smaller diameter than the first lesion. The suppurating abscess of the leg became exceedingly painful and complete rest became necessary. This abscess healed at the end of a month.

The abscess at the epigastrium, which was only two centimetres in

diameter, ceased to suppurate on applying compresses of boric acid, and became covered by an eschar which was exceedingly painful. Since the end of November the pains have become insupportable; no other means of relieving them have been found than to apply every two hours, night and day, poultices with vaselin to which cocaine had been added.

The speaker called attention to the fact that the patient was exceedingly nervous, though seemingly of a good constitution, and the production of a lesion on the leg, though the tube was applied opposite the abdomen, would seem to indicate a particular predisposition, a marked receptivity as to the action of the rays, which are known to possess powerful penetrating powers. He argued that there must have existed a special proclivity on the part of the patient, for in many other cases in which the sittings had lasted four or five times as long, and repeated several times, at twenty-four hours' interval, he had not observed such phenomena.

In another case radiography of the pelvis and femur, in a little girl 9 years old, was followed by the production of a red spot on the thigh; the epidermis was raised and fell off, but no pain nor eschar occurred. Yet the same tube, connected with a coil giving sparks twenty centimetres long, had been applied in the same manner, for two hours (actual sitting being one hour), a very good photographic proof of the region examined resulting. It must be said, however, that, owing to the result obtained in the first case, he had placed the tube farther off. But the patient's general condition was such as to have involved greater receptivity. Mention was also made of the fact that in neither case did the patient perceive any electrical sensation or feeling of heat during the sitting.

The pain felt by the patient in whom the eschars were produced was similar to that caused by a deep burn; the wounds resembled the latter as to pain, but it seemed that the effect produced was quite different from that of a burn. The x-rays thus appear to exert on the cell and its contents a powerful action which would seem to show that it is imprudent to employ them for any prolonged period in some patients, in the neighborhood of important organs, such as the stomach, the heart, or lungs, or to expose a delicate organ such as the eye to their destructive influence.

The author remarked that the body of an animal already dead for some time is always more opaque—that is to say, penetrated with more difficulty by the x-rays—than after death while the body is still warm. This difference in the transparency of the tissues may be due to the progressive coagulation of fibrin.

Dr. Lannelongue remarked that the above observations gave a fresh example of the inflammation extending to suppuration that may be caused by the x-rays. While Dr. Sorel thought that the second abscess observed in his first—*i.e.*, in a situation where the tube had not been applied—was likewise due to the rays, the speaker argued that this hypothesis seemed hardly justified, from the fact that no bacteriological examination of the pus was made. It would be interesting to know positively whether in this case suppuration was exclusively chemical, as it should have been.

The x-rays give rise to special disturbances of nutrition, which may go

as far as the mortification of the tissues. Suppuration is rather uncommon, and it remains to be proved whether it arises without microbes; whether, in one word, it is of chemical origin. These singular effects of the x-rays are comparable to those observed by the speaker over twenty years ago on patients exposed to the chemical rays of the sun. The experience took place at the Trousseau Hospital. In the midst of July, and during a hot day, about twenty children had been placed in their beds in a court for several hours. The court was a sanded one, and the sun did not shine into it in the afternoon nor upon the children; this was certain. However, most of them suffered from the accidents of severe burns, erythema, cutaneous suppuration, followed by erysipelas, which in two cases caused death.

Great emotion was produced in the hospital by this event, and the advice of the celebrated physicist, Foucault, to try the effect of strontium glass panes was followed. Accordingly other patients were exposed to the same light in the court along with other children whose hands were free and not covered with glass plates. The patients whose hands were thus protected were not affected; those whose hands were exposed were burned like the first children, and this was undoubtedly due to the chemical rays of the solar light.

GREAT BRITAIN.

Society of Anæsthetists.

Pulmonary Disorders After the Administration of Anæsthetics.—Dr. Silk introduced a discussion on this subject. He dealt with the subject under three heads: 1. The relative frequency of these pneumonic troubles: Transitory bronchial irritation was not referred to, but marked pneumonia with definite signs. In preanæsthetic and preantiseptic days pneumonia was a frequent cause of death in surgical cases, but, according to records of 5000 cases published in hospital reports for 1894 and 1895, only 13 cases of pneumonia were referred to, and of these all but 1 were more or less of a septic nature. Prescott, of Boston, in 40,000 cases of etherization, found only 3 cases of typical pneumonia. 2. Possible explanations of their occurrence: The bacillus of bronchitis had not yet been discovered, and one of the three micro-organisms credited with causing pneumonia was often found in the normal buccal *débris*. 3. To what extent could they be referred,—either to the anæsthetic used or the apparatus employed? Experiments carried out on anthrax spores, cholera, tubercle, and typhoid bacilli, with different anæsthetic agents, showed, in many cases, rapid and permanently fatal results. Nitrous oxide,—the mildest of all anæsthetics, both from an anæsthetist's and bacteriologist's point of view,—which was used probably more frequently than all the others put together, and under conditions which would be most likely to convey infection, except when a foreign body had slipped into the trachea, had never, to his knowledge, been followed by anything approaching pneumonia. Dr. Silk mentioned several improvements in apparatus introduced of late years to facilitate cleaning.

Mr. Rickard Lloyd remarked that, in 1887, he suggested the use of a new or a thoroughly-cleansed bag for each patient. It had often occurred to him that more might be done to protect patients from possible chill at the time of operation and in the wards afterward, as, should it occur, the risk of simple inflammation of the respiratory passages was greatly increased, if not solely induced, by it; and specific bacilli would find it a great auxiliary in the production of the disease. He read extracts from the notes of Mr. C. H. Wilmer, house-physician at the West London Hospital, of a case in which bronchitis, followed by left lobar pneumonia and left pleurisy with effusion, supervened soon and successively after removal of a broad-ligament cyst from a pale, delicate-looking woman aged 24. She ultimately recovered. No other cases of the kind occurred about this time in the hospital; and, indeed, bronchial irritation calling for treatment was, in his experience, rare, while he was unacquainted with any case of pneumonia that had been attributed to an anæsthetic, and the case cited was not, apparently, of specific origin.

Manchester Medical Society.

The Technique of "Serum Diagnosis" in Typhoid Fever.—A. Sheridan Delepine, of Manchester, having tried the various methods which seemed likely to yield good results, selected the one that had been used in his laboratory ever since. The results obtained with this method have been carefully tested in over fifty cases by independent observation of patients kept under close supervision by Dr. Marsden at the Monsall Fever Hospital, and have proved to be remarkably accurate.

The serum of an immunized animal or that of a patient affected with a specific fever may be used for the purpose of diagnosing whether a bacillus is the bacillus causing that fever; or, on the contrary, the specific bacillus may be used for the purpose of finding out whether the fever has been produced by the microbe in question.

In both cases the technique may be the same. It is important, however, to keep in mind that, for practical purposes, the diagnosing of a fever by the action of the serum on a known bacillus is far more useful and, as a matter of fact, a far more reliable method than the diagnosis of the bacillus by means of the serum of an immunized animal. It is the happy idea of reversing all the experiments which had been made up to then which led Widal to the valuable application which he introduced at the beginning of last summer. He must also be credited with the very important notion that the action on which the test is based is not one possessed only by the blood of animals or persons who have become more or less completely immunized, but also by the serum of individuals who have been too recently immunized to give any evidence of what is generally known as immunity. These individuals are undoubtedly undergoing processes which will end in more or less complete immunity, but they are as yet on the wrong side of the fever, which may or may not kill them. The reaction, under those circumstances, becomes less one of immunity than one of infection.

At the beginning of 1896 four kinds of methods had been used to demonstrate the action which the blood or blood-serum of immunized animals has on the corresponding microbes.

1. The microbe is cultivated in the serum of an animal immunized against it. By this method Charrin and Roger found, in 1889 (on litmus [or phenolphthalein], slightly alkaline lactose-peptone-agar, or gelatin no production of acid reaction), that the bacillus pyocyaneus forms clumps or flakes, which fall to the bottom of the test-tube in the shape of a sediment, the supernatant fluid becoming clear. In the serum of a non-immunized animal the bacilli remain disseminated, giving rise to a uniform turbidity.

2. The serum of an animal immunized against a specific microbe is mixed with the microbe to be tested and is injected into the peritoneal cavity of a guinea-pig.

By this method R. Pfeiffer found (in milk no coagulation) that motile micro-organisms (bacillus of cholera or typhoid fever) are rapidly immobilized, and that, if the serum be potent and the quantity of micro-organisms not too large, the microbes undergo a granular degeneration, and may ultimately disappear by a process of solution which its discoverer has compared to that of a piece of sugar placed in water. Other microbes than the specific ones do not undergo the same degeneration.

A loopful, = 2 milligrammes ($\frac{1}{3}\frac{1}{2}$ grain), of a twenty-hour culture on agar of the bacillus to be tested, made into an emulsion with bouillon, is mixed with 0.1 to 0.2 cubic centimetre ($\frac{1}{6}$ to $\frac{1}{3}$ grain) of the serum of an animal strongly immunized against the specific bacillus —say, of typhoid fever. The total amount of fluid thus obtained is made up to 1 cubic centimetre (15½ minims). This is injected into the peritoneal cavity of a guinea-pig weighing 300 grammes (10 ounces); fifteen minutes, thirty minutes, one hour after the injection a few drops of the peritoneal exudation are removed and examined under the microscope. If the bacillus be a genuine typhoid bacillus it will be found, at the end of an hour, to have undergone the degeneration described above. This is what is known as Pfeiffer's phenomenon. In his first experiments, instead of mixing the bacilli with immunized serum and injecting the mixture into a non-immunized animal, Pfeiffer injected the bacillus into the peritoneal cavity of a highly-immunized animal. The bacilli, which are not of the same species as the one which has been used to immunize the animal, do not undergo the degeneration above described to any marked extent.

3. The microbe to be tested is mixed with the blood-serum of an animal strongly immunized against the specific micro-organism which is looked for. A hanging-drop preparation is made with the mixture and examined under the microscope.

This method was used by Metchnikoff (in peptone-bouillon or water no production of indol), with various modifications, to elucidate certain points raised in the controversy between him and Pfeiffer; it has been improved by Bordet (in presence of minute traces—$\frac{1}{100}$, $\frac{1}{150}$, $\frac{1}{200}$, $\frac{1}{300}$—of serum of an animal immunized against typhoid fever, immobilization and agglomeration well marked by any of the methods mentioned above). By

this method Bordet has observed *in vitro* the phenomenon observed as occurring only *in vivo* by Pfeiffer, and the agglomerative reaction previously described by Charrin and Roger, Metchnikoff, and others.

A young culture (twenty-four hours old) of the doubtful microbe is mixed with 5 or 7 cubic centimetres ($1\frac{1}{4}$ or $1\frac{3}{4}$ fluidrachms) of bouillon, or of 0.60-per-cent. NaCl solution. To 2 drops of this emulsion 1 drop (or less) of the serum (recently obtained) of an animal immunized against the specific microbe under investigation is added. A hanging-drop preparation is made with the mixture. (When a complete production of Pfeiffer's phenomenon is wanted, a small quantity of the fresh serum of an ordinary animal is added to the mixture.) If the microbe tested be the specific one —say, the vibrio of cholera—it is rapidly immobilized, then it runs into clumps, and, when fresh serum has been added, the vibrios are seen to undergo granular degeneration. Other vibrios than the one against which the serum has been immunized do not, in the same degree, undergo these changes. Bordet considers this reaction quite as specific as Pfeiffer's reaction.

4. The microbe to be tested is mixed with the more or less diluted serum of an animal immunized against the special microbe under investigation. The mixture is placed in a test-tube and allowed to stand for some time. A positive reaction is indicated by the formation of a precipitate composed of clumped bacilli and by the supernatant fluid becoming clear. A negative reaction is shown by the turbidity of the fluid remaining general and no precipitation being formed.

This is the method specially introduced by Max Gruber and Durham (the bacillus was very motile in neutral bouillon cultures). These observers also used a microscopical method much resembling Bordet's, and they insist especially on the importance of a certain degree of dilution, as Pfeiffer had done also, in connection with his own method.

The bacillus to be tested is grown for from twelve to twenty-four hours on agar. A loopful of the culture (= about 3 milligrammes—$\frac{1}{20}$ grain) is made into an emulsion by thorough mixture with 0.5 cubic centimetre ($7\frac{1}{2}$ minims) of bouillon; 5 or 10 milligrammes ($\frac{1}{12}$ or $\frac{1}{6}$ minim) of the serum of an animal strongly immunized against the special microbe under investigation are mixed with enough bouillon to get an amount of fluid equal to 0.5 cubic centimetre ($7\frac{1}{2}$ minims). The emulsion of the microbe to be tested and the diluted specific serum are mixed. The mixture is kept in a narrow specimen-tube, measuring three-eighths inch in diameter. Thirty minutes or sixty minutes later—if the bacillus is of the same kind as the one which has been used to produce the specific serum, and if the serum be potent enough—the microbes will form a sediment at the bottom of the tube, and the supernatant fluid will be clear, or nearly so. The sediment will be composed of clumped bacilli. If, on the contrary, the microbe belong to a totally different species from the one against which the serum has been immunized, the contents of the tube will remain uniformly clear.

In his work Widal adopted several of the methods just described, with slight modifications. Pfeiffer's method, very important from a theoretical

point of view, was evidently not applicable, but the three others were suitable. He used specially two methods, which may be described as the quick and the slow.

1. *Quick Method.*—To 10 drops of a twenty-four- or forty-eight-hour-old, neutral bouillon culture of the typhoid bacillus 1 drop of the blood-serum to be tested is added. The serum and the culture (which should be uniformly cloudy) are mixed together in the sterilized trough of the hematimeter. A drop of this mixture is taken and placed on a slide, covered, and examined at once under the microscope. A positive reaction, showing that the serum comes from a case of typhoid fever, is indicated by the bacilli becoming motionless and running together to form clumps, which are of various sizes. Sometimes the bacilli are not immobilized at once, and the agglomeration takes place slowly. In such cases the reaction may not be distinct for a quarter, half, or even several hours.

2. *Slow Method.*—This is the one used by Widal in his first experiments. It resembles much that followed in Charrin and Roger's experiments, from which it differs by the serum being diluted instead of being used undiluted. One part of the serum to be tested is added to 10 or 15 parts of bouillon. This mixture is inoculated with a typical bacillus typhosus. The tube is incubated at a temperature of 37° C. (98.8° F). Twenty-four hours afterward the culture is examined. If the reaction is positive, a more or less abundant sediment, composed of clumps, will be found at the bottom of the test-tube, and the supernatant fluid will be more or less clear. In a negative case the fluid would be uniformly turbid.

After mentioning Widal's method the author describes the one used by Grünbaum (at least ten cilia could be demonstrated in well-stained specimens). The chief modifications introduced by this observer are (1) the use of a U-shaped tube to separate blood-serum by centrifugalization; (2) the dilution of the blood-serum by means of a graduated pipette, the blood being diluted sixteen times; (3) the preparation of a hanging-drop for examination under a high power of the microscope (oil immersion); (4) a time-limit of thirty minutes for the observation of the phenomenon. Although the reaction can be very well seen by using the method described by Grünbaum, which resembles closely that originated by Bordet, Delepine is convinced, from personal experiments carried out in his laboratory more than two months before the publication of Grünbaum's first paper, that many of the precautions he suggests are superfluous and, by introducing complications, may interfere with the efficiency of the test. He alludes here not to investigations in which one wants to experiment on the properties of the various elements of the blood, but to those which have for their object a clear and unambiguous diagnosis of typhoid cases and a rapid estimation of the potency of the serum of such cases.

Referring to his own experiments, he stated that his first care was to obtain a typical culture of the typhoid bacillus. Among those he had isolated from typhoid spleens during the last four years he selected one separated two years ago, highly pathogenic at the time, and which, ever since, had invariably given all the reactions which are now associated with the Eberth bacillus.

The next step was to test the action of the blood of various individuals on that bacillus. The following types of cases were selected :—

1. Normal individuals of various ages, having never had typhoid fever or having recovered from it for a great number of years (over twenty in one case).

2. Patients affected with various febrile diseases, certainly not enteric fever, and who never had had typhoid fever.

3. Patients affected with enteric fever in whose cases the clinical features left absolutely no doubt as to the diagnosis. The patients were of various ages, in different stages of the fever, more or less severely affected, and suffering from various complications.

With material thus obtained the test was applied in various ways suggested by the known methods already described, and it was found that by any of these methods it was possible to obtain the reaction in cases of typhoid fever.

The blood was used quite fresh and entire, dried and entire, coagulated, separated by centrifugalization, and in every case the reaction could be obtained more or less clearly in cases of the fever.

The blood was used in various dilutions from $\frac{1}{2}$ to $\frac{1}{2000}$, and it was found that the dilution $\frac{1}{100}$ was the most suitable. In very exceptional cases it seemed that the proportion $\frac{1}{5}$ gave better results than $\frac{1}{100}$. In several instances in which the reaction appeared slowly, a proportion of serum equal to $\frac{1}{200}$ or $\frac{1}{300}$ seemed insufficient to bring about a clear reaction within two hours. The bacillus was grown on various media, such as ordinary nutrient agar, gelatin, and bouillon, or carefully neutralized peptone bouillon. Young and old cultures were used. The cultures in neutral bouillon were invariably found to be the best when not more than twenty-four hours old.

It was soon apparent, however, that all the methods were not equally good ; thus :—

1. The test-tube method recommended by Durham and Gruber failed to give clear results much more often than the microscopical method introduced by Bordet. When the serum was weak the precipitation was incomplete. When very small quantities of half-dried blood, such as are often obtained from weak anæmic patients, and specially from young children, arrived at the laboratory, it was difficult to obtain enough clear serum to make up the mixture to a sufficient bulk. Then occasionally the blood of people not affected with typhoid fever produced a partial precipitation. For those reasons he soon discarded the method.

2. The hanging-drop method introduced by Bordet and used by most observers gave very good results, but in measuring the fluid with pipettes and mixing the emulsion of bacilli and the serum in small capsules, or even on slides, Delepine soon noticed that extraordinary care had to be taken to avoid errors. Graduated pipettes were unsuitable when eight or ten observations had to be conducted within a short time, unless one had as many pipettes to dispose of, for it was not only necessary to wash the pipettes thoroughly, but also to boil them in water to destroy all traces of the substances causing agglomeration. The same thing had to be done with the troughs,

slides, and cover-glasses used. At first he replaced graduated pipettes by ordinary capillary pipettes, which were destroyed after each observation, the dilutions being made by counting the number of drops, the same pipette being used for counting drops of diluted serum and of the emulsion of the bacillus; but this implied much waste of time and also of material; and, when one has only a small quantity of serum, it is not always easy to get a small drop out of it, as the serum has a tendency to adhere to the point of the pipette. Exact measurement of the dilution becomes difficult under those conditions.

3. He finally adopted a method the objects of which are:—

(1) To permit the measurement of extremely small quantities of blood.

(2) To simplify the apparatus required so as to diminish chances of contamination.

(3) To make it easy to destroy rapidly by heat all traces of serum which may remain attached to the measuring instrument.

(4) To obtain conditions under which spurious clumping is not likely to occur.

All the apparatus required consists of:—

(*a*) A sterilized lancet-shaped needle.

(*b*) The same pipette in which the blood has been collected, and of such diameter that it, after it has been broken across the platinum loop, which is used for measuring the serum, can easily be introduced into it if necessary.

(*c*) A platinum loop measuring about one millimetre in diameter, and holding about two milligrammes ($\frac{1}{3}\frac{1}{2}$ minim) of fluid.

Each loop has a definite capacity which can be easily estimated by direct weighing. A glass slip is placed on one of the pans of a delicate chemical balance. This is exactly counterpoised. A drop of fluid is then taken with the loop and deposited on the slip; this is immediately weighed by means of the rider before evaporation has had time to cause a sensible diminution of weight. Then 4 more drops are rapidly added in such a way that they do not touch each other, and the rider being moved so as to counterbalance a weight five times greater than that of the first drop, the beam should remain horizontal, and so on.

(*d*) Slide and cover-glass, absolutely clean; if they have been used before for the test they should be boiled in water.

(*e*) A tube of culture of the typhoid bacillus in neutral bouillon (twenty-four hours old at most). This tube should be free from clumps, and the bacillus should be actively motile.

When the typhoid bacillus is re-inoculated in neutral bouillon daily for weeks or months, there comes a time when, all of a sudden, all the cultures will clump spontaneously, or on the addition of any serum; this is not due to a failure in the growing power, cultures in alkaline bouillon showing the same property. In fact, the importance of the reaction of the mixture of serum and culture is of great importance. Dr. Sidebotham will shortly give the results of a number of experiments bearing on this point. The same thing may be observed in cultures grown repeatedly on agar. If, however, cultures on agar, gelatin, or solidified blood-serum are made at

longer intervals, and the bouillon tubes are inoculated daily from these cultures on solid media, the difficulty caused by this spontaneous clumping can be got rid of, at least for a time. It is well to keep up the virulence of the typhoid bacillus by the usual method of re-inoculation.

The procedure is as follows: With the sterilized loop nine drops of the evenly turbid bouillon culture are taken and deposited separately on the clean slide or cover-glass.

The platinum loop is again sterilized, and, when cool, 1 drop of the blood is taken and deposited also separately on the cover-glass or slide.

The 10 drops are then mixed thoroughly and rapidly together.

If the mixture has been made on the cover-glass the cover is placed on the slide moist-face downward, and gently pressed so as to obtain an even film. If the mixture has been made on the slide, it is simply covered with a clean cover. In either case the preparation consists of a thin film of culture mixed with the serum investigated, and a certain number of red blood-corpuscles, separating the slide from the cover-glass so that a capillary space of pretty uniform thickness is obtained.

It will be noticed that instead of separating entirely the blood-corpuscles from the serum he tried, on the contrary, to retain a part of them in the preparation. They do not interfere in the least with the reaction, and they have the advantage of acting as supports for the cover-glass, and of causing the film in all preparations to be nearly of uniform thickness. Under these conditions the bacilli are free to move about; and when the preparations are kept in a moist chamber they can be observed from day to day for more than a week.

(*A*) *When the blood tested is that of a non-typhoid patient*, the bacilli remain diffused all through the preparation; they move freely about, and even when kept for days they hardly ever show any tendency to form good clumps. This absence of characteristic clumping is observed even when the proportion of blood is one-fifth or even one-half. An imperfect clumping without loss of motility has been observed in a few cases after twenty-four hours, but the appearance of the preparation in such cases is very different from what is observed in cases of typhoid fever.

The motion of the bacilli is quite characteristic; they move at different rates, some, especially the very short ones, darting across the field, and disappearing in a few moments; others pursue a zigzag course. Some of the long ones are less active, and progress by an undulating motion; some are almost motionless. The actively motile bacilli, by striking against blood-corpuscles, keep them in constant motion. The power of some of the bacilli is such that they often drag or push the corpuscles through a portion of the microscopical field. The bacilli have generally seemed to me to be most active after they have been in contact with the blood for a short time. After a few hours they generally become less motile, but not altogether motionless, and the progressive motion is seldom lost before several days have elapsed.

When clumps are formed they are generally very small, very few, and composed of bacilli which are quite motile still and are very often seen to separate themselves again. Owing to the activity of the bacilli, these small

imperfect clumps are seen to alter in shape. As this phenomenon is seldom observed, and as, when it occurs, it does not take place till after several hours have elapsed, it is not (under the conditions explained above) a serious source of difficulty.

When bacilli are kept for days under observation, they multiply, and many of them become very long.

In making these observations it is not necessary to use very high microscopical powers, unless one wishes to study the minuter changes taking place in the bacillus, in which case the best immersion lenses are necessary. The bacilli can very clearly be seen with a magnification of from two hundred to three hundred diameters, and the formation of clumps can be easily recognized with a magnification of fifty or less. In fact, it is quite possible to see with the naked eye a marked change in a drop of a mixture in which the agglomerative phenomenon is taking place.

(*B*) *When the blood tested is that of a typhoid patient* in a suitable stage of the fever (that is, after the third or fourth day from the beginning, and better still after the seventh or eighth day), the phenomena observed differ according to whether the serum is potent or not.

When the serum is potent changes take place so quickly that, however rapidly the mixture is covered and placed under the microscope, many of the bacilli will already have become nearly motionless, and several clumps will have formed before the preparation can be seen. The greater part of the bacilli, however, will still be actively motile,—in fact, they seem very often to be in a state of extraordinary activity, as if they were under the influence of stimulation. Soon, however,—that is, from two to five minutes,—they gradually lose their power of translation, they seem paralyzed, and exhibit nothing more than an oscillatory motion, which after a time becomes feebler, and cannot be distinguished from Brownian movement. At the same time clumps are forming rapidly. In from five to thirty minutes hardly any free bacilli remain between the clumps, which may be of various sizes. The presence of the corpuscles does not affect this phenomenon of agglomeration. The corpuscles behave like perfectly indifferent bodies. The bacilli are not attracted by them; they do not seem either to be clearly repelled, but it is worth noticing that clumps very seldom inclose a corpuscle or form against them.

All bacilli do not behave exactly in the same way; some of the very small bacilli, almost coccus-like, very often retain their motion for a longer time than the others. In some parts of the preparation the bacilli remain swarming, while in other parts they are already completely agglomerated. He thought at first that this was the result of imperfect mixture, but the perfectly even distribution of the red blood-corpuscles (when these are retained) showed that this was not the case. Within a few minutes, however, all these differences may disappear, and the preparation present a uniform appearance.

When the serum has a feeble agglomerating power the changes described above take place much more slowly and less completely. The motility of the bacilli is generally considerably reduced (after being first increased), but it may never be entirely abolished in a $\frac{1}{10}$ dilution.

The clumps form gradually; they are, in most cases, sufficiently numerous at the end of half an hour to make the diagnosis possible, but in some cases one may have to wait one and even two hours before the preparation takes a very characteristic appearance. These cases are few.

Both in the case of the complete and of the incomplete reactions just described, the agglomeration remains clearly distinct for days after the preparation has been made. In some cases the bacilli remain motionless, but in most cases many bacilli regain their activity.

There is also marked evidence of growth. The bacilli forming the clumps may reach a great length, but the filaments thus formed remained clumped together. In very few cases the bacilli become granular and indistinct; this has usually been observed when the reaction has been intense.

Before concluding, he added that when the question of applying this test to diagnosis, and the method of collecting the blood had to be considered, he thought it necessary, in order to remove chances of contamination, to recommend (1) that the skin from which the blood was obtained be sterilized; (2) that a needle which had not possibly come in contact with any other blood, and been thoroughly sterilized, be used; (3) that nothing but blood collected in sterilized hermetically-sealed pipettes be sent to the laboratory. Further experience has convinced him that all these precautions are useful.

Referring to the results obtained by Dr. Sidebotham and himself with this method, he stated that they entirely confirmed the results obtained in a series of over fifty hospital cases. In applications of this kind the technique must be such that scientific investigations will not suffer from accidental circumstances which would vitiate the results.—*British Medical Journal*, April 17, 1897.

Selections from Reports of Members of the Annual's Staff of Correspondents.

China.

DR. R. COLTMAN, JR.,

CORRESPONDING EDITOR FOR SURGERY AND GENERAL MEDICINE.

All books, theses, monographs, etc., published in China should be sent to

DR. R. COLTMAN, JR.,
Peking, China.

Fistula in Ano.—During the past year I have operated on thirty-two cases of fistula in ano, none of which showed any sign of tuberculosis in other parts of the body; all promptly became well when the sinuses were laid open. The average time for entire healing was twenty-six days, but many were long-standing cases with several long sinuses. Twenty-one cases had but 1 opening into the rectum, seven had 2 internal openings, three had 3, and one had 6 openings. The latter required seventy-two days for a cure and several operations. It is common to find openings into the scrotum, and several instances of the so-called horseshoe fistula are included in the list. My plan of procedure is to give a cathartic

the morning before operation,—usually 1 or 2 pil. cathart. comp., U. S. P.; wash out the bowel with an enema of boiled water just previous to operation. Then on a grooved director open the sinuses farthest from the rectal opening, and, if only one opening into the bowel exist, cutting that at the same operation. If more than one opening exists in the bowel I cut one at a time, at intervals of ten days, until all are well. Immediately afterward either the stick of caustic potash or tincture of iodine is applied on a pledget of cotton, wiping thoroughly the fistulous tract. I then insert a hempen roll, the size of a lead-pencil, well greased with vaselin, to prevent surface closure. One daily dressing of this kind suffices. No opium is given, the bowels being allowed to move at will. In several cases where the ulcer healed slowly I have had success by applying on the hemp daily vaselin with from 10 to 20 drops of turpentine to the ounce. [ROBERT COLTMAN, Jr., Peking. Report of January 20, 1897.]

Poland.

DR. J. DRZEWIECKI,

Redaktor Korespondent z działu polskiej literatury tyczącej się: Medycyny ogólnej i lecznictwa; pediatryi; akuszerzyi; ginekologii; laryngologii; otologii; hygieny; demografii; medycyny sądowej; histologii; patologii; bakteryjologii; anatomii; fizjologii.

Wszystkie pisma lekarskie, dzieła, rosprawy, monografije, itd., w języku polskim wydane, a tyczące się przedmiotów powyższych, winny być nadsyłane pod adresem

DRA. DRZEWIECKIEGO,
87, Krakowskie Przedmieście,
Warszawa,
Królestwo Polskie.

Phosphorus in Osteomalacia.—KASMINSKI has treated at Professor Jordan's clinic in Cracow 13 cases of osteomalacia in women in which he obtained excellent results with phosphorus. The patients were from 26 to 40 years old, all multiparæ. The disease had lasted some years in all, and in 1 as much as eleven years. In 5 cases the patients walked with difficulty before the treatment, being obliged to support themselves upon canes and the surrounding objects; the rest were unable to leave their beds, and two could not even move because of the pain. After the phosphoric treatment all began to walk without any support. The treatment lasted from four to fourteen months. The cases being watched from six months to three and one-half years after the course of treatment, it was found that relapses occurred in 2 cases in one year and a half after treatment, and lasted a comparatively short time (four months). In 1 case pregnancy ensued. According to the author, the success of the phosphoric method depends on (1) long-continued treatment and (2) large doses. The treatment must last for months and even years, and only then, in his opinion, will there be no relapses. He gave the phosphorus in codliver-oil, beginning with 0.01 gramme ($\frac{1}{6}$ grain) in 50 grammes ($1\frac{2}{3}$ ounces) of oil, 2 teaspoonfuls daily, afterward gradually increasing the dose to 0.035 gramme ($\frac{1}{2}$ grain) in 50 grammes ($1\frac{2}{3}$ ounces) of oil and giving the teaspoonfuls daily. The whole quantity of phosphorus taken by the patients during the entire treatment amounted to 0.5 to 1.3 grammes ($7\frac{1}{2}$ to 20 grains) and the codliver-oil from 1100 to 3250 grammes. During the treatment the general nutrition of the patients increased considerably.—*Przeglad Lekarski*, Nos. 47–49, 1896.

[Although the author remarks that he has not observed any bad con-

sequences from such treatment, it is, nevertheless, difficult to understand that phosphorus taken in such large quantities should have no action upon the parenchymatous organs and especially on the liver.—Cor. Ed.]

Russia.

DR. J. DRZEWIECKI,

РЕДАКТОР-КОРРЕСПОНДЕНТ изъ области русской литературы, касающейся: Общей медицины и терапіи, педіатріи, акушерства, гинекологіи, ларингологіи, отологіи, гигіены, демографіи, судебной медицины, гистологіи, бактеріологіи, анатоміи и физіологіи.

Всѣ періодическія, медицинскія изданія, сочиненія, статьи, монографіи и т. д., изданныя на русскомъ языкѣ и касающіяся вышеупомянованныхъ предметовъ должны быть адресованы на имя

ДРА ДРЖЕВЕЦКАГО.

87 Краковскіе Предмѣстье,

Варшава.

Rectal Injections.—PROFESSOR SAVELIEFF, of Moscow, has investigated the question of clysters, experimenting on rabbits and human cadavers. The pressure of injections into the rectum was measured by means of mercurial manometer and the liquid employed was dyed with India ink. After applying a pressure of from 5 to 7 centimetres and raising it 9 centimetres, the liquid began to flow from the mouth in from thirty to forty minutes. In a live rabbit he at first applied slight pressure (2 centimetres) and afterward increased it to 6 centimetres. At the end of two hours the black liquid began to flow out of the mouth of the rabbit; and dissection showed traces of the India ink all over the digestive tract. The pressure from 11 to 14 atmospheres of mercury (which corresponded to 149.6—190.4 centimetres of water) was quite sufficient to produce tearing of the wall of a human intestine. In view of the above the author insists that high injections absolutely require the assistance of the physician and should be controlled by the manometer in all cases, especially in those where the supposition as to the morbid changes in the walls of the intestines is not positively excluded.—*Work of the Society of Russian Physicians*, in Moscow, 1896.

Changes in Ovaries in Old Age.—OTROSHKEVITCH has investigated the changes in the ovaries of old women, and arrived at the following conclusions: 1. Diminution of volume of ovaries advances with age and depends upon the predomination of the fibres of connective tissue. 2. The disappearance of epithelium covering the surface of the ovaries must be regarded as one of the constant symptoms of changes in old ovaries. 3. The absence of ripe ovules and degeneration represent the most important and characteristic changes of old ovaries. 4. Hyaloid degeneration of arteries gradually increases with age, and in very old age we meet with very high degrees of this degeneration. 5 Fatty degeneration of the cells is moderate, and seems to depend on the feeble nutrition of the ovaries. 6. Direct connection between degeneration of the vessels and cessation of the functions of the ovaries does not seem to exist, as ovaries cease their functions when the quantity of degenerated vessels is very limited, its nutrition being, therefore, but little changed. The principal part in this complicated process is probably played by the nervous system.—*Inaugural Dissertation*, St. Petersburg, 1896.

Clinical Notes and Therapeutic Suggestions.

Baths and Gymnastics in Arteriosclerosis.—J. Groedel, of Bad-Nauheim, who has given special attention to the treatment of arteriosclerosis, in answer to the self-propounded question "May any person whatever with demonstrable arteriosclerosis, or where such may with probability be assumed, be allowed to take baths?" concludes that, although the increased blood-pressure, "considered as the usual consequence of treatment by the Nauheim baths, may, at first sight, seem to indicate that every patient with arteriosclerosis should be excluded from a treatment by baths, a further increase of the high blood-pressure usually found in arteriosclerosis must not only surcharge the heart more than is already the case, but also create the danger of the bursting of a cerebral miliary aneurism, so often present in cases of arteriosclerosis." He has by numerous observations been able to convince himself that baths can be prescribed for these patients "in such a manner that the increase of blood-pressure does not take place, or only in a very slight degree." If the temperature be kept almost at the point of "indifference,"—that is, about from 92° to 93° F. (33.2° to 33.8° C.)—the primary acute increase of blood-pressure caused by the contraction of the cutaneous vessels, and most to be feared, will be very slight, and if there be carbonic acid in the bath at the same time will quickly disappear. If the skin of the patient be cooled somewhat by moistening the parts particularly sensitive to cold before entering the bath, the avoidance of that primary increase of blood-pressure, or, indeed, any shock whatever, will be the more certain. A similarly good effect is produced when the patient is only allowed to take half baths and the exposed parts of the body are wrapped up so as to prevent cooling. In most cases the amount of water can be increased little by little at each bath until a full bath is at length attained, but even then it is advisable to let the patient only submerge his body by degrees. Placing cold bandages on the bather's head is often indicated. By proceeding cautiously in this manner he has never had an unfortunate case in the course of a practice of twenty-two years in Nauheim. Under what conditions can a course of baths be indicated or beneficial in cases of arteriosclerosis? It may be desirable to give baths for some other disease when arteriosclerosis is present. It is mostly a question of diseases based on the same etiological principle as arteriosclerosis itself, or such as usually lead to it. By combating these we can at the same time retard the progress of the sclerotic process in the vessels. He mentions gout, chronic articular and muscular rheumatism, arthritis deformans, and neurasthenia.

That it is possible completely to remove existing sclerotic degeneration by any means he does not believe; we are, however, undoubtedly able to retard the deleterious process. The first thing is, of course, the removal of all conditions disposing to arteriosclerosis. One of these, for which treatment by baths is especially serviceable, he has already mentioned. Of the greatest importance is a proper diet and general regimen, to which the

patient must be trained, and this is easier and more successful in a watering-place than at home. But even a direct influence of the baths on the sclerotic process, and with it a limitation of the disease, is, in his opinion, possible. Having considered all the theories that have been propounded regarding the origin of arteriosclerosis, he concludes that a disturbance in the nutrition of the walls of the vessels must play an important part, and that functional troubles of the vascular innervation are perhaps the primary cause. The acknowledged tonic effect of the baths on the nervous system may, of course, be taken into especial account for the vasomotor part of the process. Disordered nutrition in certain organs can, no doubt, be entirely removed, or, at least, improved by means of baths; why not also disordered nutrition of the vascular system?

Of particular importance is a course of baths in cases of arteriosclerosis when, owing to this change, the heart is no longer able to satisfy the increased claim on its functional capacity. When disordered circulation is caused by arteriosclerosis, the manifold consequences of cardiac insufficiency, if recent, sometimes disappear, and if more advanced can often be decidedly improved. We find not infrequently that in the course of a "kur" the pulse improves considerably as regards frequency, quality, and rhythm. On examination the heart also shows a corresponding change for the better compared with its former state. Yet there are cases in which the success is only slight, especially those in which the arteriosclerosis has attacked the greater vessels in a more extensive manner or has even led to a dilatation of the aorta and aortic regurgitation; then, again, little success is attained in cases in which there is already an advanced degeneration of the myocardium.

Baths are contra-indicated for arteriosclerosis when there is such a high degree of insufficiency of the cardiac muscle that digitalis and the other usual drugs remain without effect. For patients with remains of apoplexy the following rules may be laid down: If apoplectic fits have already occurred repeatedly, every kind of bath treatment must be avoided. After the first attack six months, at least, must have passed before a course of baths is prescribed, so as to be, to a certain extent, sure that there is no tendency to recurrence. For those persons, however, whose apoplectic fit has occurred more than a year previously, a course of baths may be prescribed without any misgiving whatever. In cases of sclerotic contraction of the kidneys (as well as of contracted liver in cirrhosis) treatment by baths is of little use, both as regards the sclerotic process in these organs and the secondary disturbances in the organs of circulation which are dependent on it. For patients of this class who are very much enfeebled baths are absolutely contra-indicated. The same may be said when arteriosclerosis is combined with diabetes, if patients are very much enfeebled. But if there be no great weakness patients usually feel very well during a course of baths of not too severe a character, if a corresponding mode of life be observed. Patients with aortic aneurism should only be advised to take a course of baths when the disease has assumed a more stable character. Having, in the course of years, treated a comparatively large number

of such patients, he has usually observed a decided improvement in their general state of health, and likewise in the state of their circulation, without ever having had an unpleasant incident to record. As regards angina pectoris following sclerosis at the commencement of the aorta near the origin of the coronary arteries, or sclerosis of these arteries themselves, he has seen many patients with all the appearances of angina pectoris take a course of baths with very good results; but others have derived no advantage from it whatever, or only very little. That in the cases first mentioned I always had to deal with true angina pectoris (sclerotic) I cannot, however, venture to maintain.

The mechanico gymnastic treatment is of less importance for arteriosclerosis than the baths, and can only be applied to a limited extent. A gentle, not too prolonged, general massage is almost always permissible; likewise passive movements may be employed, as thereby only relief of the heart is accomplished without any incitement to the energetic output of force and without any increased blood-pressure. As regards the circulation of the blood itself, the result is not usually very great, whereas for the abovementioned diseases that often accompany arteriosclerosis, such as rheumatism and gout, massage is often beneficial. Resistance gymnastics cannot be allowed in cases of universal arteriosclerosis of a high degree. The increased energy of the heart-action caused by the muscular exercise is only compensated in an incomplete and unsatisfactory manner by a corresponding dilatation of the arteries, and therefore a dangerous raising of the blood-pressure and surcharging of the heart takes place. Instead of an improvement of the cardiac insufficiency in such cases, the opposite is brought about; whereas if the arteriosclerosis be not advanced or be apparently confined to only a few vascular regions an attempt with resistance gymnastics may be made, but gymnastics must be very gentle,—that is, the exercises should be made with little resistance and all trying movements avoided. For this purpose he prefers the Swedish manual gymnastics as modified by the late A. Schott, and which he has made use of since the publication of his first paper on this subject in 1881. The mildest form of these manual-resistance gymnastics resemble passive gymnastics very much in effect. The incitement to venous discharge from the capillary regions and the peripheral veins, as well as the easing of the arterial current—that is, relief of the heart—surpass, by far, the increase of the cardiac action which is caused by motor impulse and other circumstances. As regards the so called Zander mechanical gymnastics for those patients, only those apparatuses can be made use of which serve for passive movements, massage, or vibration. Still, in exceptional cases, some other apparatuses are applicable.

Patients who have once had apoplexy are naturally not to be treated by resistance gymnastics, nor those patients affected with aneurism. Although it would appear that the same rule is applicable to angina pectoris, he had sometimes seen a good result produced by resistance gymnastics in this disease. Whether in these cases it was a question of sclerosis of the coronary arteries or not is difficult to say; he can only state that the

patients showed unmistakable signs of arteriosclerosis. Of course, in these cases, too, the movements must be of the easiest kind, and must be desisted from altogether, as previously explained, if the peripheral arteries are very rigid.

Some patients feel greatly benefited by vibrations applied to the back by Zander machines. Last year he had had a patient under treatment who was able to cut short the attacks of angina pectoris by applying vibration to the cardiac regions with a small special apparatus. Here, however, Groedel cautions the reader not to regard what has been stated as universally applicable. We must in each case cautiously feel our way, try whether gymnastics can be borne, and if there be the slightest doubt we must desist.

As to the "Terrainkur" (pedestrian exercise), many patients with arteriosclerosis complain of oppression even while walking up gentle ascents; but sometimes we hear that such patients feel very well while walking slowly uphill. As a rule, however, he should not advise methodical hill-climbing to be used therapeutically for persons with arteriosclerosis. Fifteen years ago it happened that a patient with angina pectoris under his treatment, while attempting to climb a hill near Nauheim, in spite of his having forbidden it, fell down dead.—*The Lancet*, April 17, 1897.

Symptoms of Chloroform Collapse.—Guthrie reviews this interesting subject. The symptoms are in all cases alike, and are as follow: Sudden and complete blanching of the face takes place, leaving it of a ghastly-gray hue. The term "pallor" conveys no idea of the actual appearance. The eyelids fall open, the eyeballs are fixed in the upward position, with pupils fully dilated as under extreme atropinism. At the same time the cornea becomes glazed and sticky, giving an appearance which, once seen, is never forgotten. It can only be described in a somewhat fanciful manner by saying that the light seems to fade from the eye as does the color from the cheek and lips. Probably it is due to flaccidity of the cornea from decrease of intra-ocular tension, noticed by Dubois (Soc. de Biologie, 1884). It is the undoubted look of death. I have seen it at many a death-bed, but never under any other circumstances except those at present considered.

The appearance of a person in a dead faint, or just after a severe accident, is no more than the shade of that which obtains in cases of chloroform collapse.

The pulse and cardiac impulse are at these times no longer to be felt. Respiration commonly ceases at the moment when the blanching and stoppage of the pulse occur, but at times a few feeble and irregular inspiratory gasps are subsequently drawn. The patient is to all appearances dead. Whether the heart actually ceases to beat at such times will probably never be ascertained, for the moments are too valuable to be spent in delicate investigations on this point. Neither is it possible to affirm from clinical observation that the heart becomes dilated, as in the experiments of MacWilliam and Johnson on animals. Time cannot be wasted in mapping out

the area of the heart's dullness in a patient who is in imminent danger of death.

In some cases lividity, accompanied by turgescence of the veins of neck and face, immediately precedes the blanching and look of death, and is coincident with the stoppage of respiration. Possibly dilatation of the heart has actually taken place, and the condition is that of the true cardiac syncope described by Snow.

It might be objected that, were dilatation present, the cyanosis should continue, and not give place to pallor; but, possibly, as the heart fails regurgitation takes place into the inferior cava, and allows the blood from the distended veins of neck and head to enter the right heart.

In children, cyanosis, except where actual mechanical asphyxia has been produced, is less apparent than pallor. Under treatment, children almost invariably recover from these alarming conditions, whereas in adults the reverse is unfortunately the case.

As a rule, the preliminary signs of collapse are sufficiently well marked, and if observed in time many a catastrophe may be averted.

These signs are circulatory and respiratory.

The circulatory sign is the presence of increasing pallor, not amounting to absolute blanching.

Failure of respiration is marked by a peculiar type of breathing, in which expiration is extremely short and inefficient, while inspiration is sudden, forcible, and gasping, often accompanied by falling of the lower jaw, and spasmodic clonic contraction of the chin-depressers and muscles of the neck. The inspiratory gasps are irregular and broken, and occur with increasing slowness until the condition of sudden collapse ensues.

This type of breathing is precisely similar to that which is often seen in a patient dying of respiratory failure from other causes.—*Clinical Journal*, April 14, 1897.

Treatment of Goitre.—Charles L. Gibson, of Brooklyn, gives an excellent review of an article by Bruns on the evolution of the modern treatment of goitre, read before the Twenty-fifth Congress of German Surgeons. Two decades ago the only treatment in vogue for goitre was the old and untrustworthy remedy iodine. At the Sixth Congress of German Surgeons, in the year 1877, attention was called by Rose, based on his own experience, to the radical cure of goitre by extirpation. This communication was particularly timely, as the beginning of the antiseptic era prepared the ground for the greatest surgical undertakings. It is interesting to note how rapidly the excision of the thyroid and improved results followed. In twenty-seven years prior to 1877 only 150 excisions of the thyroid had been recorded, with a mortality of 21 per cent.; while in the five years following 1877 there were 240 operations, with 12-per-cent. mortality.

Operations for extirpation of the thyroid lost their greatest drawbacks and dangers,—secondary hæmorrhage and wound infection,—not only with the development of antiseptic measures, but also with the perfection of methods and technique of operation.

Prior to this time the operation had been conducted like in ordinary extirpations of a tumor, the goitre being superficially isolated and all blood-vessels ligated as cut, the result being that the same vessel was often divided in different places and required repeated ligation.

The separation of the cellular tissue was often pursued too far, resulting in extensive bleeding, requiring ligatures *en masse*, obscuring the entire operative field and jeopardizing the nerve-trunks. This uncertain method of atypical tumor extirpation was now transformed into the typical extirpation of a viscus, an absolutely safe operation, and, for the experienced operator, a bloodless and complete procedure. The credit of devising a systematic operation belongs, above all, to Billroth, and next to Kocher, who essentially perfected it. It depends on the certain principle of exact anatomical knowledge concerning the course of the arteries and veins of the thyroid, and of the recurrent nerve, so that the essential object of the operation is the typical exposure and isolated ligation of the main arteries and veins at their well-known situations, and the speedy and bloodless isolation of the tumor.

Another important advance was the experience demonstrating the needlessness of tracheotomy, which many operators formerly had considered absolutely necessary in facilitating excision of the goitre and preventing the after-collapse of the trachea. Not only does tracheotomy interfere with aseptic wound-healing, but before as well as after excision of thyroid, it is absolutely unnecessary even in the greatest degrees of compression of the trachea. The respiratory disturbances immediately subside after removal of the goitre. It may be laid down, as a rule, that even in the greatest dyspnœa and danger of suffocation the operation which is indicated is not immediate tracheotomy, but immediate extirpation of the goitre. The total extirpation of the thyroid as a radical cure, as recommended by Rose, advanced in favor more and more, and reports of four hundred such cases were recorded. Its popularity was due to the belief that it prevented recurrence from remaining portions of the gland, and apparently was attended with no greater difficulty and dangers than the partial operation. No doubts existed as to the propriety of removing the whole organ, as at that time the physiological importance of the thyroid was not known. Very soon, however, came the reports of severe after effects of total operation, such as tetanic convulsions, severe enough to cause death, and that chain of manifestations included under the term "cretinism." An early report from Reverdin, in 1882, failed to attract attention. The next year, at the Twelfth Congress Kocher communicated his report on "cachexia strumipriva," which made a marked impression. Surgical opinion did not at once universally accede to these views as to the existence and cause of the disease, and not until numerous victims of this condition had been discovered was this long-neglected gland recognized as an important vital organ.

Total excision of the thyroid, formerly the routine procedure, was at once forever stricken out as an operation of physiological incompatibility. Conservative surgical methods were now sought for, having for their object the removing of the goitre, but not of the entire thyroid gland. A time-

honored method of treatment, inaugurated at the beginning of the century by Phillip von Walther, and lately revived by Wölfler, now came into vogue. This is the typical ligature of the thyroid arteries to promote artificial atrophy of the gland. The operation was, however, scarcely performed fifty times in the last decade, having attracted little attention except as a purely theoretical measure, for the richness and irregularity of the vascular supply of the thyroid make the task practically hopeless. An operation which was destined to receive quite a different degree of attention now came to the front. The operation of enucleation, which had occasionally been practiced by some surgeons in the case of the cystic variety since its recognition by the Italian surgeon, Porta, in 1840, was now established by Socin as a typical method even in treating the solid forms of goitre. The method received immediate acceptance, and constitutes to-day one of the most notable developments of modern thyroid surgery. Instead of stopping short on the surface of the gland for fear of wounding its veins, in Socin's method the parenchyma of the gland is deliberately divided till the cyst lies exposed, and this is then shelled out by blunt dissection, entailing no loss of normal glandular tissue. The essential principle of the operation lies in accurately locating the capsule of the cyst and keeping absolutely close to it without encroaching on the surrounding glandular tissue and its numerous delicate blood-vessels,—a procedure requiring the greatest patience and technical skill. Very often, however, the enucleation is quickly performed, accompanied by little bleeding, without nerve-lesion, and the wound healing undisturbed. The operator must have a clear perception of the limitation of the operation of enucleation. It is undoubtedly the normal procedure in the less vascular cystic variety as well as in the solid forms where the nodules are loosely attached and the capsule clearly defined; and, likewise, it is absolutely indicated in goitre involving both sides of the gland where the preservation of gland-tissue on one or both sides is absolutely indicated. The operation must not be undertaken when impossible to recognize a definite demarcation between the normal gland-tissue and the diseased nodules, or where extensive adhesions are present. Here the procedure is attended with a profuse or uncontrollable hæmorrhage. The character of the operation is terrifying, and not infrequently cannot be carried out to a finish.

We possess in resection of the thyroid a procedure which replaces enucleation where the latter is contra-indicated. It has the advantage over enucleation of efficient hæmostasis, and over extirpation in the preservation of normal glandular tissue. Its chief advantage lies in the possibility of varying the method of operating. Sometimes the hilus or the isthmus can be left, or else the lower portion. It can also be combined to great advantage with enucleation. Mikulicz was the first to perform resection of the entire one-half of goitre as a typical operation.

As regards the results of the modern operations, it can be briefly stated that to-day operations for non-malignant forms of goitre are practically without danger, provided interference is resorted to before the advent of serious pulmonary and cardiac complications attending long-

continued changes in the gland. It must be acknowledged, however, as regards the ultimate results, that the partial operations have been attended with a considerable proportion of unfavorable results, owing to the frequency with which both diseased and normal glandular tissue is preserved. The recent investigations leave no doubt that the number of recurrences after operations for goitre considerably exceeds our expectations.

It is noteworthy, however, that, notwithstanding the numerous recurrences, secondary operations are but seldom called for. The statistics of eight hundred operations furnished by the cases of Socin, Kroenlein, Kappeler, and the author have in scarcely a dozen cases required operation for recurrences. We are justified in considering operation for the relief of goitre as one of the most useful surgical methods at our disposal, as it brings about an immediate disappearance of the most terrifying asphyxia, and is attended with a result so radical as usually to hold good for the entire existence of the individual.—*Annals of Surgery*, April, 1897.

The Serum Diagnosis of Enteric Fever.—Jemma, of Maragliano's clinic (*Centralbl. f. inn. Med.*, January 23, 1897), has investigated 12 cases of enteric fever and 15 of other diseases. He obtained the blood by means of a sterilized syringe from a superficial vein at the bend of the elbow. One part of serum was added to 10 to 15 parts of typhoid bouillon culture. A positive result was always obtained in the cases of enteric fever, and a negative one in the others. In 6 out of 9 cases investigated at the height of the disease the typhoid bacillus was also demonstrated in the stools and in the splenic blood. The phenomenon was present in a characteristic manner during the febrile acme. The author has previously shown that the bactericidal action of the serum is most marked at the height of the disease and when the temperature is most raised. Less serum is required to obtain Widal's reaction at this phase of the disease. The phenomenon has been shown not to be due to the serum-albumin, but to fibrinogen and serum-globulin. Devoto separated out the globulin and dried it. He found that it was not to be distinguished chemically from globulin obtained from the blood of other people. If dried at 55° C. (131° F.) it lost its bacillus-precipitating properties, but if dried at room temperature it preserved them from eight to ten days; it was free from any globulicidal action. The exudation from blisters, the urine, the milk of female typhoid patients, tears, and exudations in general show the same bacillus-precipitating action. It has been disputed whether this action belongs to the infection or to the immunization. The author has made experiments to ascertain whether heat has the same effect on this precipitation as upon the bactericidal action. A temperature of 37° C. (98.8° F.) for 24, 48, or 96 hours has no effect on the reaction, nor yet has a temperature of 40° (104° F.) for 18, 36, or 50 hours. A temperature of 55° (131° F.) for 40 minutes or 60° (140° F.) for 20 minutes not only delays the development of the reaction, but more serum is required. A temperature of 70° (158° F.) for 10 minutes destroys completely the bacillus-precipitating powers of the serum. At ordinary temperatures of 12° to 15° C. (53.6° to 59° F.) these prop-

erties are preserved in a marked degree for 40 days.—*British Medical Journal*, March 20, 1897.

Lineæ Albicantes. — Osler reports two cases of this disorder,—*i.e.*, atrophic lines on the skin,—and reviews its differential diagnosis. A young girl, aged 17, stout and comely, was brought to him by her father from a neighboring city, much distressed at the appearance of certain spots upon the knees and thighs and arms, particularly on the latter, as she was approaching the "low-neck and short-sleeved" phase of existence. She had had scarlet fever badly about four years ago, and these marks had been noticed for the first time during convalescence. They had increased within the past two years, and were a source of much annoyance. They were chiefly about the knees and outer surface of the thighs, where they formed bluish bands unusually distinct, one or two centimetres in length and five to one centimetres in width, narrowing, as is usual, at the ends. There were three or four about the extensor surface of each elbow; two of these were large and attracted attention at once. She insisted that changes took place in them when she was "out of sorts"; they get red and feel itchy, and in cold weather they had a bluish tint.

The other case was a young married man, in the stout stage, a well-nourished Hebrew, who had been badly scared by the appearance of ugly looking scars on the skin of the lower abdomen. On either side in the iliac regions the skin presented three or four pinkish-blue lines of atrophy. They felt like fissures in the skin, and the cuticle could be picked up readily. They had appeared since his marriage three months ago, and had been a source of much uneasiness to himself and to his wife.

The author also describes a remarkable instance of the development of the disease following a very rapid increase in weight during three months from 145 to nearly 190 pounds. They were similar in position to those in the above case, forming curvilinear bands, extending on either side from near the costal border to the iliac fossæ. The longest one of these was ten inches, and nearly three-fourths of an inch in breadth at its widest part. They were reddish blue in color, and over them, in certain lights, the whitish smooth cuticle glimmered.

There appear to be three different groups of these curious lineæ:—

1. Those due to distension, as from pregnancy, lineæ gravidarum, and which develop in dropsy and in consequence of rapid increase in subcutaneous fat.

2. Post-febrile atrophy, met with particularly after typhoid fever and also after scarlet fever, as in the case just mentioned. He had seen a number of instances after typhoid fever; the lineæ are usually about the outer aspect of the thighs and upon the shoulders. He alluded to an extraordinary instance, in 1895, at the seaside. The lower part of the back was scored in deep transverse lines, one above the other, white and scar-like, but separated by narrow lines of healthy-looking skin. The possessor of them told him that they had developed four or five years before, after a protracted attack of typhoid fever.

3. The idiopathic form, seen in both men and women, about the knees, outer aspects of the thighs, abdomen, elbows, and over the shoulders. This variety, quite as common in men as in women, has rarely the extent of the mechanical form.

In none is the condition of any moment, except in the first case—the young lady—the lineæ being a cause of disfigurement.—*The Montreal Medical Journal*, April, 1897.

The Chemistry and Pathology of Gout.—Arthur P. Luff took this subject for the Goulstonian Lectures, delivered before the Royal College of Physicians of London. The main points and conclusions arrived at are as follow: 1. Uric acid is not normally present in the blood of man and other mammals, nor in the blood of birds. 2. Uric acid is normally produced only in the kidneys. 3. Uric acid is normally formed from urea, probably by conjugation of that substance with glycocin in the kidneys. 4. Uric acid is present in the blood in gout as the soluble sodium quadriurate. In its soluble form it is not a toxic agent. It deposits from the blood as sodium biurate, which acts passively and physically as a foreign body in the tissues or organs in which it is deposited. 5. The presence of uric acid in the blood in gout is due to its deficient excretion by the kidneys, and to the subsequent absorption of the non-excreted portion into the blood from those organs. 6. Gout is probably always preceded by some affection of the kidneys, functional or organic, which interferes with the proper excretion of uric acid. The probable seat of the kidney affection giving rise to gout is in the epithelium of the convoluted tubes. 7. In certain blood diseases and disorders accompanied by leucocytosis uric acid is formed within the system from nuclein. Under such circumstances it passes at once into the blood and is rapidly eliminated by the kidneys. 8. The solubility of uric acid in the blood is not affected by a diminished alkalinity of the blood produced by the addition of organic acids. 9. The deposition of sodium biurate is not accelerated by a diminution of the alkalinity of the blood. 10. An increased alkalinity of the blood does not increase the solubility of deposits of sodium biurate. 11. The saline constituents of vegetables exercise a remarkable inhibitory power over the decomposition of sodium quadriurate. 12. The solubility of sodium biurate in the blood is increased by the presence of the saline constituents of vegetables. 13. The solubility of sodium biurate in the blood is diminished by the presence of the saline constituents of meat. 14. The gout-inducing properties of certain wines are not due to their acidity. Probably they owe their gout-inducing action to the effect they exercise on the metabolism of the liver.—*The Lancet*, April 17, 1897.

Treatment of Fracture of the Clavicle by Massage.—Dragon gives results of massage applied to twenty cases of fracture of the clavicle, under the care of Lucas-Championnière. The author considers the ordinary treatment of this lesion by bandages and slings as very unsatisfactory, owing to difficulty in keeping the fragments at rest and in good position, while the functions of the shoulder and elbow are liable to become im-

paired for some time in consequence of prolonged immobility. The author practices a daily massage not only at the seat of fracture, but also of the adjacent joints and muscles, and insists particularly on massage of the deltoid muscles, and careful movements, both active and passive, of the shoulder. In the intervals the upper limb is supported by a sling. Consolidation of a fractured clavicle is usually effected between the eighteenth and twenty-fifth days from the date of injury, and at the end of this period the patient, when treated in the manner described by the author, is able to use the limb freely, as the main object of such treatment is to prevent articular rigidity, and to preserve the full muscular functions.—Reprint from the *Journal de Médecine et de Chirurgie Pratique.*

Treatment of Pruritus Vulvæ.—P. Ruge reviews in an interesting manner the methods of treatment of this rebellious disorder. As it frequently is the local expression of a general process, such as diabetes, rheumatism, albuminuria, tuberculosis, neurasthenia, etc., local treatment often fails, and relief can be only obtained by treating the underlying general condition. Again, as it may be caused directly by some local pathological condition of the genitals, such as herpes, vaginitis, metritis, cancer of the uterus, etc., a careful local examination should reveal the cause of trouble and indicate the proper line of treatment. Some obstetricians describe an *essential* or *idiopathic* pruritus without apparent local causation, which they refer to central causes. Sänger does not admit the evidence of essential pruritus, but affirms the invariable existence of some primary disease of the vulva, which secondarily affects the nerve-endings. He, therefore, holds that in most cases direct external treatment will effect a cure, although in some obstinate cases resection of certain portions may be necessary. Ruge expresses the opinion that the essential part of the local treatment is thorough disinfection of both vulva and vagina. It should be done as carefully as if a vaginal operation were to be performed. Ruge washes, soaps, and then disinfects with sublimate solution the vulva, vagina, and cervix till all pathogenic micro-organisms have been removed; he then applies to the vulva an ointment of carbolated vaselin (3 to 4 per cent.). The obstetrician should carry out this local treatment himself, using his fingers, but not brushes or instruments, which might cause fresh lesions. Ruge says that the positive and immediate results are in most cases surprising. In severe as well as in mild cases, even when complicated with deep and extensive ulceration, cure is rapid. For some years he has treated systematically in this manner all cases of pruritus, whether leucorrhœa was present or not, with surprising results. Ruge's paper was read before the Obstetrical Society of Berlin, and in the discussion which followed, Martin, Flaischlen, Brose, Bodenstein, and others corroborated his statements and for the most part coincided with his views.—*Zeitschrift für Gebertshülfe und Gynakologie*, Band. xxxiv, S. 355.

The Causation of Chloroform Syncope.—Leonard Hill combats the doctrine of the Hyderabad Commission and of Lawrie that chloroform kills by paralyzing the respiratory center, and reaches the following conclusions :—

1. Chloroform produces a primary failure of the circulating mechanism and a secondary failure of the respiratory center. The respiratory center fails to act not only because it is damaged by the drug, but because of the anæmia of the spinal bulb produced by the fall of arterial tension. This is proved by the fact that the action of the respiratory center can be renewed by raising the arterial tension. The depth of anæsthesia depends, as does the paralysis of the respiratory center, on the primary fall of the arterial tension.

2. Chloroform, more than any other known agent, rapidly abolishes the vascular mechanisms which compensate for the hydrostatic effect of gravity.

3. Chloroform abolishes these mechanisms by paralyzing the splanchnic vasomotor tone and by weakening the action of the respiratory pump. When these mechanisms are totally abolished the circulation is impossible if the subject be in the feet-down position.

4. Chloroform also produces paralytic dilatation of the heart. It acts directly, like amyl-nitrite, on the musculature of the whole vascular system.

5. There are two forms of chloroform syncope: (*a*) During primary anæsthetization. The patient struggles, holds his breath, raises the intrathoracic pressure, congests his venous system, lowers his arterial tension, and, finally, takes deep inspirations and surcharges his lungs with chloroform. In the first stage the left heart becomes impoverished; in the second stage it is suddenly filled with blood. This is drawn from the lungs and is full of chloroform. The chloroform passes into the coronary arteries and the heart is thrown into paralytic dilatation. Respiration and the pulse either cease simultaneously or the pulse before respiration. (*b*) During prolonged anæsthetization this arises from gradually giving chloroform to too great an extent. The arterial pressure falls lower and lower, and, secondarily, the respiration ceases because of the anæmia of the spinal bulb. The heart is not, in this case, paralyzed by chloroform, because the drug is taken in gradually by the shallow respirations and distributed slowly by the feeble circulation.

6. Artificial respiration and the assumption of the horizontal position, if applied in time, will always resuscitate a patient from the second form of syncope.

7. Artificial respiration, established with the patient in the horizontal posture, is also the treatment indicated in the first form of syncope; the heart should be rhythmically compressed by squeezing the thorax. If this does not quickly renew the pulse the patient should be put into the vertical feet-down posture. The dilated right heart is thereby completely and easily emptied of blood. Artificial respiration is maintained during this manœuvre and the patient is brought once more into the horizontal posture. By rhythmic compression of the chest an efficient circulation is maintained through the coronary arteries; by first emptying, and then filling, the heart a fresh supply of blood is brought into that organ. If this does not prove successful on the first trial it can be repeated.

8. Inversion—that is, placing the subject in the feet-up position—or compression of the abdomen will increase the paralytic dilatation of the heart. In this kind of syncope both these forms of treatment are worse than useless.

9. In the condition of shock or emotional fear the compensatory mechanism for the effect of gravity is almost abolished and chloroform may easily be the last straw to completely paralyze the circulation.

10. Vagus inhibition of the heart is of no importance as an agent in the production of chloroform syncope.

11. Ether is, in every respect, a far-safer anæsthetic than chloroform. According to Ringer's experiments on the heart, ether is fifty times less dangerous than chloroform.

12. With the practical conclusion of the Hyderabad Commission, that the chloroform-inhaler should be removed during the struggling of the patient or when the respiration is of irregular depth, he absolutely agrees, but he considers their interpretation of their own experiments and tracings concerning the origin of chloroform syncope to be mistaken.

Not only the work of all physiologists, but also the tracings of the commission, when rightly interpreted, prove that paralysis of the circulatory mechanism, and not of the respiratory center, is to be dreaded by the anæsthetist.—*British Medical Journal*, April 17, 1897.

Cirrhosis of the Liver.—T. N. Kelynack reports the results of an analysis of 121 cases seen in the Manchester Royal Infirmary. Of the 121 cases 60 appeared to be fatal directly from the effects of the hepatic cirrhosis. No less than 15 seemed to have died directly from tuberculosis; 12 had tubercular peritonitis. Acute lobar pneumonia occurred in 5. A number of deaths were due to cardiac involvement. Several died from hæmatemesis, epistaxis, and cerebral hæmorrhage. In 1 case the author found the stomach distended with blood, although none had been ejected from the mouth. Rupture of aneurism occurred in 2. Malignant disease was present in 1 case. Hæmorrhagic nephritis was also marked in 1. Diabetes mellitus occurred in 1 case. Secondary pneumonia was present in several. He also met with malignant endocarditis in association with marked hepatic cirrhosis.

As to sex, of the 121 cases 82 were males and 39 females. The relation of males to females is thus seen to be about 2 to 1. As the accommodation of the hospital for medical female cases is somewhat less than that for males, these numbers are of but limited value as indicating the true proportion between the sexes.

The actual age was ascertained in 108 of the cases,—73 males and 35 females. The remainder were all adults.

Result of analysis:—

Age.	Male.	Female.
Oldest,	68 years.	65 years.
Youngest,	19 "	19 "
Average,	45.5 "	42 "

An analysis of the 121 cases appears to warrant the author in arriving at the following conclusions:—

1. Common cirrhosis cannot conveniently be divided into alcoholic and non-alcoholic varieties. Most examples met with in hospitals occur in alcoholic subjects.

2. Nearly 50 per cent. of the cases die directly from the effect of the hepatic cirrhosis.

3. Over 12 per cent. die from active tuberculosis. Tubercle of the peritoneum occurs in a little over 9 per cent. Either active, latent, or obsolete tubercle is met with in nearly 24 per cent. of all cases.

4. Cirrhosis appears commonest in males, the proportion being about 2 to 1.

5. The average age at death is: for males, 45½; and females, 42; that is to say, cirrhosis is fatal to women earlier than to men by three and one-half years.

6. Ascites occurs in 56 per cent. of all cases. It is usually less extensive in females than males.

7. Ascites constantly occurs in association with hæmatemesis, and they are not to be considered as mutually exclusive.

8. The weight of the liver averages, in males, a little over 53 ounces; in females, nearly 54 ounces.

9. The liver is increased in size in nearly 33 per cent. of all cases, diminished in about 61½ per cent., and normal in size in only about 5½ per cent.

10. The liver varies in size between its ante- and post-mortem conditions.

11. Typical "hobnailed" livers are not common at the present day, although evidence of alcoholism is constantly being met with.

12. The spleen in hepatic cirrhosis weighs on the average in males 14¼ ounces, in females a little over 11½ ounces.

13. The spleen is enlarged in 83 per cent., normal in size in nearly 9½ per cent., and diminished in 7¾ per cent.

14. The "cyanotic" spleen of hepatic cirrhosis is larger and heavier than that met with in "cardiac" cases.

15. Renal "cirrhosis" only occurs in association with hepatic cirrhosis in a little over 18½ per cent. of all cases.—Reprint from *Birmingham Medical Review.*

Bacteriology of the Nasal Mucus.—Vansant, of Philadelphia, gives a brief report of the results of a bacteriological investigation of the nasal mucus in 100 cases of chronic nasal discharge. Of the 100 cases examined the Klebs-Lœffler bacillus was found in 26, 11 of which had atrophic rhinitis, 3 purulent rhinitis, 5 in simple rhinitis, 3 in nasal syphilis, and 3 in hypertrophic rhinitis. In fifty-eight cultures staphylococci were found. No cases were examined which showed any symptoms of diphtheria. His conclusions are that in a large percentage of chronic nasal catarrh the secretions are infected with diphtheria bacilli, staphylococci, etc.—*Journal of the American Medical Association*, February 27, 1897.

Intubation as a Substitute for Tracheotomy in Acute Laryngeal Stenosis in Children.—In this paper (*Intercolonial Medical Journal of Australasia*, December 20, 1896), reviewed by Lake, A. J. TURNER compares the results obtained during three years in which tracheotomy was practiced almost exclusively, and three years in which it had given way to intubation, the cases occurring in the Brisbane Children's Hospital:—

YEAR.	PRIMARY TRACHEOTOMIES.			INTUBATIONS.			SECONDARY TRACHEOTOMIES.			TOTAL OPERATIONS.			
	Operations.	Recoveries.	Deaths.	Operations.	Recoveries.	Deaths.	Operations.	Recoveries.	Deaths.	Operations.	Recoveries.	Deaths.	Mortality Percentage.
1889–'90	23	6	17	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
1890–'91	21	8	13	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
1891–'92	24	7	17	6	2	4	. .	. .	. .	74	23	51	68.9
1892–'93	. .	. .	. .	31	14	17	6	2	4	. .	. .	. .	. .
1893–'94	. .	. .	. .	53	21	32	. .	. .	. .	. .	. .	. .	. .
1894 (6 months) . .	1	. .	1	11	6	5	. .	. .	. .	96	41	55	57.3
	69	21	48	101	43	58	6	2	4	. .	. .	. .	. .
ANTITOXIN PERIOD: 1895–'96	2	1	1	40	27	13	2	. .	2	42	28	14	33.3

The following arguments are advanced in favor of intubation: The procedure is rapid, there is no loss of blood, no anæsthesia, depression, nor increased dyspnœa, and no risk of cellulitis, as there is no open wound, and the cannula is not apt to become plugged with dry mucus, and so can be left for days undisturbed; the tube is easier removed, and there is no scar. Feeding really presents no difficulties which are not easily surmounted. Six days is given as the best period for retention of the tube. The string should always be attached to the tube and precautions taken to prevent its being pulled out by the patient. Cases are given.—*Journal of Laryngology*, April, 1897.

Idiopathic Osteopsathyrosis (Fragilitas Ossium) in Infancy and Childhood.—J. P. CROZER GRIFFITH, of Philadelphia, gives the details of a case of idiopathic osteopsathyrosis occurring in a child, aged 2 years and 10 months, and reviews similar cases which he had been enabled to collect from the literature. The patient, without hereditary predisposition, and born after an apparently normal labor, exhibited nothing unusual until the second day after his birth, when both femora were found fractured. Union was complete in three weeks. At the age of 3 months the right humerus and right femur were broken. At the age of $7\frac{1}{2}$ months he fractured his right femur. Seven months later he again broke his left thigh. Union took place, but two weeks after the dressings had been removed the bone was fractured again. From time to time other fractures of his thighs, forearms, and ribs occurred. It is estimated that in all he has seventeen or eighteen fractures. His general health and nutrition were good. There were few, if any, evidences of possible rickets.

Osteopsathyrosis may be symptomatic of other affections, or it may be idiopathic,—that is, not associated with any discoverable cause. The symptomatic form depends upon various conditions, such as rickets, syphilis, atrophy of the bone, osteomyelitis, malignant new growths, cysts, localized necrosis, etc. The influence of heredity is very marked in the idiopathic form. There is a tendency to a transmission not only through males, but to males, and a further tendency for the affection to begin in early life. The force necessary to produce the fracture is nearly always slight and sometimes remarkably so. The influence of other diseases is problematical. The pathology of the affection is imperfectly understood. An interesting feature is that union of the broken bones is remarkably prompt. The symptoms consist, of course, in the occurrence of numerous fractures from insignificant causes. In the diagnosis we must first determine the absence of other conditions to which fragility may be secondary. The prognosis is very unfavorable. The treatment, as both the cause and nature are but little known, is largely experimental. It consists in the administration of alteratives of various sorts, the maintenance of good general health, and the protection of the limbs against fracture in the expectation that the fragility may be outgrown.—*American Journal of the Medical Sciences*, April, 1897.

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AMERICAN GYNÆCOLOGICAL SOCIETY.

When to Amputate in Preference to the Usual Operation for Lacerations of the Cervix Uteri.—DR. THOMAS ADDIS EMMET, of New York, laid stress upon the fact that the operation as described in his paper is not intended to take the place of trachelorrhaphy, but is to be employed in those cases in which, by reason of the impaired condition of the tissues, depth and extent of the laceration, or excessive scar-tissue in the angle thereof, it is impossible to repair the cervix by the usual method. The operation described consisted of making an excavation in the cervix with curved scissors, removing all unhealthy tissue, and uniting the remaining flaps to the lining of the uterine canal with silver sutures. Strict antiseptic precautions should be observed and care taken to secure patency of the uterine canal.

DR. PAUL F. MUNDÉ, of New York, agreed with the author that it is often impossible to get good results without removing some of the cervical tissue. In cases of elongated cervices he amputates the cervix with a knife and, if the uterus be hypertrophied and prolapsed, narrows the vagina and performs Alexander's operation.

DR. J. RIDDLE GOFFE, of New York, took exception to the term "amputation of the cervix," because it might give rise to the impression that the operation is done with the écraseur. He thought that, in nearly all cases, a good result would follow the Emmet operation for repair of the cervix, and

was of the opinion that removal of the cervix destroys the equilibrium of the uterus.

Dr. A. Palmer Dudley, of New York, was in favor of amputation of the cervix, because in many cases no other operation is applicable.

Dr. Bache McE. Emmet, of New York, considered the operation a good one in such cases as could not be treated by trachelorrhaphy.

Dr. E. C. Dudley, of Chicago, said he had employed a modification of the Schroeder operation in many cases where the scar-tissue in the angle of the wound was inaccessible.

Dr. Thomas Addis Emmet, in closing, said the Schroeder operation is identical with the one advocated in the paper, which the speaker has performed since 1866. It was devised by Dr. Sims, but was not successfully performed by him on account of oozing of blood through the flaps and the formation of abscess.

Result of Two Hundred Operations for the Cure of Retrodisplacements of the Uterus.—Dr. A. Lapthorn Smith, of Montreal, said that ventral fixation, which is considered unjustifiable by many surgeons on account of the dangers attending it,—notably obstruction of the bowel,—is indicated in those cases where retrodisplacement of the uterus is complicated by adhesions. Alexander's operation should be employed in all cases where there are no adhesions, but a simple falling back of the uterus and appendages. The operation is contra-indicated when the uterus, after having been brought up to the symphysis pubis, immediately springs back to its former position. The author described a method by which the operation can be performed in a minute or a minute and a half, and said there is no difficulty in finding the round ligaments if this method be employed. The operation is without primary mortality and has none of the disadvantages of ventral fixation.

Intra-abdominal Shortening of the Round Ligaments for Posterior Displacements of the Uterus.—Dr. M. R. Mann, of Buffalo, gave a report of fifty-eight cases treated by a new method, consisting of shortening the round ligaments by doubling them on themselves in three equal lengths and stitching them together, after making a median abdominal incision.

A Preliminary Report on a New Method of Vaginal Fixation.—Dr. Edward Reynolds, of Boston, after describing the forces which determine the normal position of the uterus and showing, by means of drawings, how a faulty attachment, anteriorly or posteriorly, would throw the uterus backward or forward, described an operation designed to correct a too-low anterior attachment. An anterior vaginal incision, similar to that made in hysterectomy, is made, and the bladder separated up to the level of the internal os; the uterus is then put into position and the point at which the bladder separates from the anterior wall is determined by a sound introduced into the bladder; a silver-wire suture in a silk carrier is introduced in the vaginal wall at a point in front of the separation from the bladder, passing obliquely through the tissues and emerging on the cut surface below the junction of the vaginal wall with the bladder, and then

drawn through the cervix at the level of the internal os and brought out through the anterior vaginal wall at a similar point on the opposite side. A second suture is placed as near the first as is convenient, care being taken that the uterus is still well forward. The sutures are then twisted and turned down. As the stitches will be exposed to considerable traction, coarse wire should be used. The cut edges of the mucous membrane are then stitched together with fine catgut in such a way as not to increase the tension on the deep sutures.

Shortening the Round Ligaments Through the Anterior Vaginal Fornix for Posterior Displacements of the Uterus.—Dr. J. Riddle Goffe, of New York, has employed the method in eight cases with good results, and gave the following description of the technique of the operation: After the uterus is drawn well down to the vaginal outlet, a cross-section is made at the utero-vaginal junction and the vaginal tissues dissected off the bladder down to the peritoneal reflection; the central point of this incision is then caught up and the anterior vaginal wall drawn taut; a longitudinal incision is made down to the neck of the bladder, and the tissues from the urethra to the cross-section are separated by blunt dissection for half an inch on both sides; the peritoneum is then opened, and the finger passed in and hooked over the fundus of the uterus, and the latter brought into the vagina. Any adhesions which may exist are now broken up, and the appendages inspected and removed if necessary. The round ligament of first one side and then the other is picked up with the fingers, the sheath opened with an aneurism-needle, the ligament drawn up two or two and a half inches, doubled upon itself, and stitched with two or three fine sutures; the uterus is then replaced, a little gauze is introduced between it and the bladder, and the longitudinal incision closed with a running catgut suture.

Dr. Paul F. Mundé, of New York, was much gratified to see how generally Alexander's operation has been accepted, because he was the first to perform it in this country. The operation is indicated, and results in a permanent cure, in all cases where the retrodisplaced uterus is movable and the appendages not diseased.

Dr. Beverly McMonagle, of San Francisco, referred to the frequent occurrence of suppuration following Alexander's operation, and is in favor of opening the abdomen in these cases and suspending the uterus after Kelley's method. He is opposed to ventral fixation on the ground that it interferes with pregnancy, and said that patients upon whom vaginal fixation has been performed often complain of numbness and pain in the vagina.

Dr. A. Palmer Dudley, of New York, had recently lost a patient from obstruction of the bowel following ventral fixation and would never perform the operation again. He also referred to the pain caused by the uterus rising in the pelvis when pregnancy occurred after the operation. He is in favor of Alexander's operation in cases where a diagnosis of perfect appendages can be made.

Dr. Charles P. Noble, of Philadelphia, cited the case of a woman who had died in labor as a result of ventral fixation, and is opposed to the

operation in child-bearing women because it so often interferes with pregnancy. Suspension of the uterus is without this disadvantage, and is to be preferred. He has employed Alexander's operation in suitable cases and with fairly good results. If the wound is closed by the Bassini method, there is but little danger of hernia.

Dr. H. J. Garrigues, of New York, had performed Alexander's operation, combined with removal of the appendages, in several cases with good results, but does not think the operation is of any value if the uterus is hypertrophied and prolapsed. Amputation of the cervix is indicated in such cases to induce involution of the organ and reduce its weight.

Pelvic Blood-collections and their Treatment by Vaginal Incision.—Dr. E. E. Montgomery, of Philadelphia, states that intraperitoneal and extraperitoneal hæmorrhage, although due to many causes, most frequently occurred as a result of rupture of an ectopic pregnancy, and often is so rapid as to cause speedy death. Hæmatocele from other causes often remains encysted for a long time without giving trouble, or may become absorbed. In cases where hæmorrhage is recent and is believed to have ceased, no attempt at evacuation should be made when the case is first seen, for fear of dislodging a clot and causing a recurrence of the bleeding. In all other cases the blood-collection should be evacuated by vaginal incision, and the cavity irrigated with normal salt solution and packed with sterile gauze.

Dr. Harris mentioned two cases of hæmatocele which had come under his observation. In the first instance hæmorrhage had resulted from torsion of the pedicle of an ovarian cyst. The second case was a woman who had recently been confined. The labor was normal, but soon after an abscess appeared in the vagina which discharged spontaneously. A tumor remained, which the speaker incised, evacuating a large quantity of pure blood.

Dr. Bache McE. Emmet, of New York, agreed with the author that vaginal incision and evacuation is the proper treatment in cases of pelvic blood-collections, and advised exploration of the pelvic cavity to determine, if possible, the source of the hæmorrhage.

Sociological Aspects of Gonorrhœa.—Dr. E. W. Cushing, of Boston, dwelt upon the importance of the remote effects of gonorrhœa on the human race, and said it was the duty of the physician to endeavor to check the spread of the disease by instructing his patients in regard to its frightful consequences. Legal recognition of the social evil has had but little effect in those countries where it is practiced, and the author did not think the remedy lay in this direction.

Dr. H. J. Garrigues, of New York, spoke of the importance of protecting the future wife and children by teaching men to avoid the disease. If they will not be chaste, they should at least take precautions against contracting the disease. The speaker was in favor of regulation of the social evil by law, and in this way restricting it.

Professor Hutchinson, of Buffalo, had made a study of the subject, and his views were the same as those of the author. He laid stress on the

sterility which follows gonorrhœa in men as well as in women. He agreed with the author that legal enactment would have no effect in controlling the spread of the disease.

Dr. Ashton, of Philadelphia, pointed out the fact that the disease is generally spread by secret prostitutes, and it is impossible to reach these by legislation. He was also of the opinion that legal recognition of the social evil is demoralizing to a community and lowers its tone. The physician should tell men the terrible results of the disease and appeal to their self-interest in order to make them avoid it.

Dr. A. Palmer Dudley, of New York, said that the remote effects of gonorrhœa cannot be overestimated, and that a diagnosis of the disease can always be made from the pathognomonic signs given. The disease should be treated by heroic measures. He also referred to the value of microscopical examination of discharges and pus, and said he had recently removed a quantity of pus from the pelvis of a young woman which was found to contain gonococci. The husband confessed to having had several attacks of gonorrhœa.—*Boston Medical and Surgical Journal*, June 10, 1897.

The American Pediatric Society.

Report on the Collective Investigation of the Antitoxin Treatment of Laryngeal Diphtheria in Private Practice, 1896-1897.—In the second and supplementary investigation the aim has been to ascertain: 1. What percentage of cases of laryngeal diphtheria recover, without operation, under antitoxin treatment? 2. What percentage of operated cases recover? The report now submitted may properly be limited to answering these two inquiries.

Since the beginning of the general use of intubation no disease has been more thoroughly observed and more fully reported than laryngeal diphtheria. Operative cases, especially, without hesitation, whether ending fatally or favorably, have been fully and promptly put on record. The result has been a collection and tabulation of cases available for control, such as few diseases offer. There are thousands of intubation cases before the days of antitoxin, and thousands since, available for comparison. It is, then, in cases of laryngeal diphtheria, especially those requiring operative interference, that we may apply the crucial test of the value of the antitoxin treatment.

Circulars were distributed throughout the United States and Canada, the following means being employed: Contributors to first reports, members of the society acting as agents for their respective localities, boards of health, local medical societies, and antitoxin manufacturers.

In order to reduce sources of error it was desirable to bring together a large number of cases, from widely-distributed localities, from many different observers and operators, and from a period of time including all

seasons of the year. All returns have been examined by the committee, and only such cases accepted as bore satisfactory evidence that they were, first of all, diphtheria, and, secondly, that the lesion had invaded the larynx.

A total of 1704 cases of laryngeal diphtheria serve for present study. A few cases (228) had not satisfactory evidence that there was laryngeal involvement; indeed, some were reported through misunderstanding the fact that only laryngeal cases were wanted, and a few were reported in which there was no mention that antitoxin was used. These cases are, of course, not included in the number referred to above; 218 of them ended in recovery and only 10 were fatal.

In a total of 1704 antitoxin-treated cases of laryngeal diphtheria there was a mortality of 21.12 per cent. (360 deaths).

TABLE OF ALL CASES, SHOWING AGE AND RESULT OF TREATMENT.

	Fatal Cases.	Recoveries.	Totals.	Mortality.
1 year and under,	25	35	60	41.66 per cent.
1 to 2 years,	77	219	296	26 01 " "
2 to 3 years,	81	260	341	23.75 " "
3 to 4 years,	42	216	258	16 27 " "
4 to 5 years,	47	160	207	22.70 " "
5 to 10 years,	72	345	417	17.26 " "
10 to 15 years,	9	64	73	12 32 " "
15 to 20 years,	2	24	26	7 65 " "
Over 20 years,	5	17	22	22.72 " "
Unknown,	0	4	4	
	360	1344	1704	21.12

Cases Not Operated On.—The first inquiry of the circular was: What percentage of cases of laryngeal diphtheria recover, without operation, under antitoxin treatment?

Of 1704 total cases, 1036 were not operated upon (60.79 per cent.). Of these, most did not require operative interference, a few cases were thought to require it, but operation was refused. All cases are included, and it will be noted there are no eliminations.

Among the 1036 cases not operated on there was a mortality of 17.18 per cent. (178 deaths), or, to answer the inquiry of the circular exactly, of 1036 cases not operated on, 82.82 per cent. recovered (or 858 cases).

As good as is this percentage of recovery in so large a number of cases of diphtheria of the severest type, it is believed it is not as good as it ought to be. Cases of laryngeal diphtheria not requiring operation, according to the testimony of consulting intubationists, are seldom heard from a second time, and less often find their way into reports. It was formerly estimated that about 10 per cent. of cases of laryngeal diphtheria recovered without operation. The present report shows that in 1036 cases 82.82 per cent. recovered.

Cases Operated On.—In analyzing this class of cases it is believed a more exact conclusion as to the value of the antitoxin treatment can be arrived at than in the non-operative.

There will be entire harmony of opinion as to the severity of laryngeal diphtheria which requires operative interference. In the last report the recoveries had crept up so high in the one hundred cases that it seemed more natural to speak of the percentage of mortality.

In this connection it is interesting to inquire what were the most reliable statistics of intubation, taking cases as they occurred, without selection, in pre-antitoxin days. In 5546 intubation cases collected by McNaughton and Maddren, in 1892, the mortality was 69.5 per cent., or, to bring the facts into line, 30.5 per cent. recovered.

O'Dwyer's personal experience in private consultation brings us more nearly face to face with the old-time experience with diphtheria. Note that the following five hundred cases came under the observation and care of one practitioner,—a skilled operator,—extended over a dozen years of time, and, therefore, included all types of the disease.

Exclusive of the first one hundred cases of intubation, which he (O'Dwyer) regards as experimental, the results stand as follow:—

2d, ...	100 intubations,	recoveries,	27 per cent.
3d, ...	100 "	"	30 " "
4th, ...	100 "	"	26 " "
5th, 70 in the . .	100 "	"	27 " "

Total percentage of recoveries, 27.56 per cent. When he had reached 70 in the fifth hundred something occurred which carried the phraseology up over the divide, so that it was appropriate to speak of percentage of mortalities. At this point in history antitoxin arrived, and interrupted forever the old series. In O'Dwyer's next 59 cases the mortality was 14 deaths, or 23.7 per cent.

In a total of 1704 laryngeal cases there were 668 cases operated upon. In the 668 there were 182 deaths, or a mortality of 27.24 per cent. In the former report, in 553 intubated cases the mortality was 25.9 per cent. In approximate figures there is a difference between 27¼ per cent. and 26 per cent.

Summary.—Sixty thousand circulars were distributed throughout the United States and Canada.

Time allowance, the eleven months ending April 1, 1897.

Whole number of cases in this report, 1704; mortality, 21.12 per cent. (360 deaths).

The cases occurred in the practice of 422 physicians in the United States and Canada.

Operations employed:—

(*a*) Intubation in 637 cases; mortality, 26.05 per cent. (166 deaths).

(*b*) Tracheotomy in 20 cases; mortality, 45 per cent. (9 deaths).

(*c*) Intubation and tracheotomy in 11 cases; mortality, 63.63 per cent. (7 deaths).

Number of States represented, twenty-two, the District of Columbia, and Canada.

Non-operated cases, 1036,—60.79 per cent. of all cases; mortality, 17.18 per cent. (178 deaths).

Operated cases, 668, or 39.21 per cent. of all cases; mortality, 27.24 per cent. (182 deaths). Two facts may be recalled in connection with this paragraph: 1. That before the use of antitoxin it was estimated that 90 per cent. of laryngeal-diphtheria cases required operation, whereas now, with the use of antitoxin, 39.21 per cent. require it. 2. That the percentage figures have been reversed, formerly 27 per cent. approximately representing the recoveries, whereas now, under antitoxin treatment, 27 represents the mortality. To put it in other words, before the use of antitoxin, 27 per cent. recovered; now 73 per cent. recover, and this in the severest type of diphtheria.

Although the present report seems to reveal a mortality too large in each of the two classes, it is nevertheless the case. The mortality is large —larger than the personal experience in private practice of many would lead them to expect.

The reasons for this are (1) that antitoxin is still used too late, either from procrastination on the part of the physician or objection on the part of the friends, or (2) in a half-hearted way, which shows itself in doses from one-tenth to one-fourth as large as they should be. In truth, both the physicians and the friends of the patient are timid.

This report, it must be admitted, shows too large a mortality. In the opinion of the committee it is a larger mortality than will ever be shown again. Antitoxin is gradually being used earlier in the disease, and it will soon be used in sufficient doses.

To the society the committee desires to say that it has sought to carry out their wishes in putting antitoxin on trial, to accept no testimony that did not bear the stamp of reliability, that it has employed the methods approved in the case of the first investigation and report, and that it has confined its work to definitely answering the main questions which the society and profession now have in mind. Points that were settled in the first report and have since been corroborated by general medical literature are not again taken up.

If the committee is asked to put forth the three most valuable points established in this eleven months' work, they are:—

1. The mortality of laryngeal diphtheria at present rests at 21.12 per cent.

2. That 60 per cent., approximately, have not required intubation.

3. That the mortality of operated cases is at present 27.24 per cent.

The committee, composed of Drs. W. P. Northrup, Joseph O'Dwyer, L. Emmett Holt, and Samuel S. Adams, recommends that antitoxin be given at the earliest possible moment in all cases of suspected diphtheria.

Quality.—Of the products on the market some have, by test, been found to contain one-half to one-third the antitoxin units stated on the label. Select the most concentrated strength of an absolutely reliable preparation.

Dosage.—All cases of laryngeal diphtheria, the patient being two years of age or over, should receive as follows: First dose: 2000 units at the earliest possible moment. Second dose: 2000 units, twelve to eighteen hours after the first dose, if there is no improvement in symptoms. Third

dose: 2000 units, twenty-four hours after the second dose, if there is still no improvement in symptoms. Patients under two years of age should receive 1000 to 1500 units, the doses to be repeated as above.—*North Carolina Medical Journal*, June 5, 1897.

GREAT BRITAIN.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.

Indications for and Methods of Operation for Post-nasal Adenoids.—DR. GREVILLE MACDONALD stated, as a first proposition, that the actual quantity of hypertrophy of the naso-pharyngeal lymphoid tissue affords one no indication, alone, of the necessity for operation. There are cases where nose-breathing may be almost an impossibility, and yet no fault can be found with the development or the general nutrition, or more local consequences, —such as ear trouble, cold-taking, sore throats, sneezing, or asthma. On the other hand, in some patients the removal of an absurdly small enlargement of the pharyngeal tonsil may induce extraordinary improvement as regards one or more of the common symptoms. Why this difference should obtain is not very easy to account for, although he is in the habit of explaining it to parents upon a theory of handicapping: one horse may be extravagantly handicapped, and yet win the race, while another will be thrown out of it just because he is obliged to carry a very little more than was consistent with his physique. Similarly, one boy with a little bit of adenoids is deaf, round shouldered, and in a constant state of catarrh,—although, perhaps, with neither buccal respiration nor snoring to help the diagnosis,—while his brother may snore and habitually hold his mouth open, but otherwise be the picture of perfect health. Possibly upon such an hypothesis, also, may be explained the increasing necessity for the operation; for one can scarcely believe that, were the consequences of post-nasal hypertrophy in our grandfathers so serious as they are now, they could have so long escaped recognition and treatment. As a corollary of these remarks, the author formulated this rule: That the necessity for operation depends not upon the growths themselves, or their quantity, but upon the mischief they are doing; and, as an extension of this one, that the mistake apt to be made by the younger and more zealous operators consists in assuming that every case of adenoid growth must be submitted to the surgeon. Were this so, fifty times the number of operations that at present take place in the year would suffice to effect the necessary clearance. And yet, so enthusiastic is he for the operation, that he thinks it would be an inestimable boon were a compulsory examination made of all children in public institutions or elementary schools to ascertain and advise upon this subject.

Whenever there is a constant tendency to cold-taking, or there is chronic laryngitis or bronchitis, and the patient is under thirty, we should not hesitate to operate, and that with a most favorable prognosis, should the obstruction be profound.

Whenever—to come to the nervous symptoms—we have paroxysmal sneezing or hay fever, spasmodic asthma or laryngismus stridulus, headaches, chorea, or epilepsy, we need not scruple to operate, although here, again, our prognosis must be guarded.

Finally, whenever there is distinct flattening of the lower part of the thorax on one or both sides, or depression of the costal cartilages, or prominence of the sternum, we should probably be right in operating, although there may not be much indication of general malnutrition.

He points out the fact that, with a nasal obstruction, the younger the patient, the less pronounced invariably is the tendency to buccal respiration, and that many grave cases of adenoids in children under 4—including, of course, infants—are overlooked because the child always breathes through the nose. The instinct of nose-breathing is sufficiently strong to surmount serious interference with its successful performance, while the habit of buccal respiration is acquired but slowly and, he thinks he may say, with difficulty. And, of course, the more persistently is buccal respiration inforced, where there is nasal obstruction, the greater the mischief induced, whether in the way of thoracic malformation or deficient oxygenation. He therefore argues that the absence of buccal respiration is no indication against an imperative necessity for operation.

As to indications afforded by the age of the patient, so far as actual interference with respiration is concerned, the younger the patient and the more nose-breathing is persisted in, the greater the necessity for operation. On the other hand, he has often thought, from the observation of individual cases, that the very fact that buccal respiration is so thoroughly established removes from the growths their most important menace. The average middle-class mother is now fully alive to the importance of the symptoms of snoring and mouth-breathing; but she exaggerates the mischief wrought by the latter.

It is not the mouth-breathing which is harmful in most cases, but the obstructed nose-breathing. No greater mistake can be made than for a parent to insist upon a child breathing through the nose when he prefers to breathe through the mouth.

An argument commonly used is that when the patient is approaching the age at which we may hope for spontaneous atrophy operation is not called for. In many cases this argument should have very great weight. Provided the symptoms are comparatively insignificant and the patient appears, on the whole, to be improving rather than the reverse, he thinks we may safely leave the case alone, especially if we can watch its progress from time to time. But, on the other hand, he would combat by every argument in his power such a suggestion where there are grave symptoms,—such as deafness, anæmia, asthma, etc.,—and for the reason that, generally speaking, the older the patient, the more guarded we find ourselves compelled to be in our prognosis. Briefly, spontaneous atrophy at the age of 20 will not give us as satisfactory results as operation at 18, just as operation at 16 would probably have been still more satisfactory.

In all cases we have to bear in mind the fact that probably a good

many of our worst cases would, if left alone, have improved enormously, for we cannot but be struck with the fact that it is not infrequent for older patients to assure us that they were frequently or always deaf as children, but that now they hear perfectly. And yet we should bear this in mind: we must remember the grave risk the patient may be incurring by leaving the obstruction alone during those years when he needs all the oxygen he can be given, all the health he can acquire, and when he commands a power of rehabilitation such as he will never subsequently enjoy.

We must remember, also, that it is by no means certain that because we can see or feel some slight enlargement of a pharyngeal tonsil, that it must be considered as necessarily pathological, and that it is impossible to determine where the normal ends and where the morbid begins. The author invariably makes it his aim to impress this point very forcibly upon his students, in order that they may learn to judge each case upon its own merits.

There is one other class of cases worth referring to, which would not be comprised under any of the remarks above made. These are, for the most part, individuals whose singing voices are of consequence, whether professionally or merely for their friends or themselves. Whenever he finds in a singer a small hypertrophy of the pharyngeal tonsil, even when it is of absolutely no pathological importance, he has no hesitation in urging removal; and he thinks he can, without exaggeration, affirm that he has never operated in such a case without the results being remarkable, more especially in the direction of improving the timbre of the head-notes.

As regards the second division of this subject,—of the methods of operation,—the essential point in the successful performance of the operation lies in the operator's belief in his own methods being incomparably superior to those of any other practitioner.

Mr. Lennox Browne agreed with Dr. Macdonald that the actual methods to be adopted, or preference for a particular instrument for removal of these vegetations, must always be largely controlled by the individuality of the operator and by the exigencies of the case. The bold surgeon may find a thorough sweeping with the curette, followed by an equally thorough sweeping with the finger-nail, sufficient; another using the forceps may, perhaps, be equally successful; while a third, whether he use curette, finger-nail, or forceps, or even all three, failing to grasp the nettle firmly, may simply irritate to fresh growth a portion not removed, to be described by him as a recurrence.

The method of operating is of little consequence provided it is thorough and rapid. The more thorough it is, the less the risk of a second operation being ever required, and, the more rapidly it can be performed, the more superficial can we allow the degree of anæsthesia to be maintained. And upon the latter point he believes depends very largely the safety of all such procedures.—*Journal of Laryngology, Rhinology, and Otology*, June, 1897.

Selections from Reports of Members of the Annual's Staff of Correspondents.

Jamaica.

DR. HENRY STRACHAN,
CORRESPONDING EDITOR FOR SURGERY AND GENERAL MEDICINE.

All books, theses, monographs, etc., published in Jamaica should be sent to

DR. HENRY STRACHAN,
Kingston, Jamaica.

Exophthalmos of the Left Eye Due to Cyst in Left Nasal Cavity. Removal of Cyst. Recovery, with Disappearance of the Exophthalmos.—The patient, A. D., was a boy, and was admitted with exophthalmos of the left eyeball. No cardiac or thyroid symptoms present. At first no cause was evident. He was kept in for observation. After a time it was found that the inner wall of the orbit was encroaching on the orbital cavity. This became more marked, and attention was directed to the nasal cavities. No symptoms had appeared or been complained of, but on examination there was found to be some degree of obstruction to the passage of a forcibly expelled or inhaled air-current through the left nostril, and a tumor was found, high up, at the posterior part of the left nasal cavity near the left posterior naris, pressing on the inner orbital wall. This, on removal, proved to be a cyst containing about one ounce of mucoid material. After the operation the proptosis gradually subsided, and in about ten days or a fortnight the condition of the left eye was normal. The boy remained under observation for some time longer and then returned to the country, well.

Rupture of the Globe of the Eye. Operation. Recovery, with Good Vision.—The patient, T. H., was a soda-water bottler. While engaged in his occupation a bottle of soda-water exploded, injuring the right eye. On examination, the globe was found to be ruptured. The tear in the cornea began about two millimetres from outer edge of the cornea, a little below the horizontal meridian, and, extending across the cornea in a direction upward and inward, it continued through sclerotic (in same direction) for about one-fourth inch. The iris protruded through the rent, but very little vitreous had escaped. The eye was rendered as aseptic as possible, the iris replaced, and the rent stitched with the finest "eye" silk and needles. The recovery was slow, but steady, and the patient was discharged after four months with good vision through an artificial pupil (outer side), which was made after the eye had recovered, as the line of union in cornea was slightly cicatricial in centre.

Ovarian Cyst Weighing Sixty Pounds. Operation. Recovery.—The patient—W. M., aged 60 years—was admitted weighing 306 pounds. There was a history of intra-abdominal tumor of ten months' standing. On examination the abdomen showed itself enormously enlarged,—viz., girth at umbilicus, 62½ inches; length from tip of sternum to umbilicus, 19 inches; from umbilicus to pubes, 9 inches. Thus the growth occupied the abdominal cavity, above the umbilicus chiefly. There was a faint sensation of elasticity or obscure fluctuation, but only the history obtained from the surgeon who sent the patient to the hospital enabled the diagnosis of ovarian cyst to be made with any degree of certainty.

An incision was made above the umbilicus and ending one inch below it. Tumor proved to be a colloid cyst of the right ovary, and weighed about 60 pounds. The pedicle was short and broad. The ovarian vessels and the tube, etc., were tied near the uterus and the line of the broad ligament; between these points stitched with fine catgut. A glass drainage-tube was inserted. Primary union in wound occurred. The stitches were removed on the sixth day, and the drainage-tube on the eighth day. The patient got up on the twentieth day, and left the hospital on the thirty-fifth day, weighing 218 pounds. When seen afterward (two months) she was in excellent health. This case is noteworthy from the enormous weight of the tumor and the rapid and good recovery. The patient was very fat, in addition to having to carry a tumor weighing 60 pounds, and consequently for some weeks before the operation the patient could not walk at all.

Old, Depressed Fracture of Skull. Psychical Symptoms. Operation. Recovery.—Joseph Wood, aged 51 years; married; color, brown; seaman; from Grand Cayman. He was admitted into the hospital on April 24, 1895, with a cicatrix over the frontal region, with a sinus leading down to a depressed fracture of the left frontal bone, caused by a blow accidentally received three months before—on January 1st of the same year—during a storm at sea. He stated that he was unconscious for three days after injury and no medical aid was available. At the time of admission he suffered from constant headaches, sleeplessness, and loss of the power of thought. While in the hospital, for a few days before the operation he never voluntarily conversed or appeared to take interest in anything, always "wishing to die on account of his state of misery."

The following are the steps of the operation performed: Large semilunar flap turned back over fracture of frontal bone, left side, above outer half of orbit. It was found that a large, triangular bit of bone had been wedged beneath and overlapped by the surrounding bone. The edge of depressed bit was bitten away with Hoffman's forceps, but depressed bit could not even then be elevated, therefore the centre of the depressed bit was removed with trephine and the remainder removed in two pieces. The dura, which had been so thrust in by the very thick, depressed bit of skull, did not pulsate, but after the removal of the last bit of bone it assumed its normal position and pulsation was apparent. The skull was abnormally thick,—at least one-half inch. In the granulation tissue filling the depression were fragments of the straw-palm-leaf hat that the man had worn at the time of the injury. Recovery was perfect, only interrupted by an attack of influenza. The stages of his ailment were three,—viz.: 1. Primary,—old compressed, depressed fracture of the left frontal bone. 2. Secondary,—cerebral symptoms (psychical). 3. Intercurrent,—influenza. Recovery, mentally and bodily.

Compound Depressed Fracture of the Skull. Convulsions. Operation. Recovery.—The patient, S. B., fell from a height of about twenty feet on the right side of the forehead. On being brought to the hospital there was found to be a depressed fracture of the frontal bone on that region, with lacerated wounds of the scalp over it. While being examined the child

became unconscious, and convulsions of the left side of the face and conjugate deviation to the left occurred. He was at once removed to the operating-theatre for operation.

During the course of the operation convulsions extended from the face to the left arm and then to the left leg; so that the whole left side was in a state of clonic spasm. Just at the end of the operation the convulsions became general, with cyanosis, and, on reflecting a large crescentic flap, an extensive comminuted depressed fracture of right frontal bone was found. Such bits of bone as could be elevated were so treated, which necessitated the use of Hey's saw and Hoffman's forceps to remove the overlying bits of bone; the loose fragments were removed, leaving an area of dura mater about the size of a sixpence, but more triangular in shape, exposed. The lacerated scalp-tissue was rendered as aseptic as possible, and the flaps stitched with catgut.

The child recovered consciousness in two hours after the operation, had a fair night, and was bright and cheerful next day. He has made an excellent recovery, and the hole left in the skull has apparently filled up with new bone.

He is an unusually bright, pleasant little fellow, and it will be interesting to watch his future intellectual and moral development after so severe and extensive a lesion over the "mental" portion of the brain.

When seen in December, 1896,—one year after operation,—he was healthy and bright. No trace of the old injury present, except a cicatrix at the site of the operation. The cavity in the frontal bone is filled in with bone.

Poland.

DR. J. DRZEWIECKI,

Redaktor Korespondent z działu polskiej literatury tyczącej się: Medycyny ogólnej i lecznictwa; pediatryi; akuszerzyi; ginekologii; laryngologii; otologii; hygieny; demografii; medycyny sądowej; histologii; patologii; bakteryjologii; anatomii; fizjologii.

Wszystkie pisma lekarskie, dzieła, rosprawy, monografije, itd., w języku polskim wydane, a tyczące się przedmiotów powyższych, winny być nadsyłane pod adresem

DRA. DRZEWIECKIEGO,
87, Krakowskie Przedmieście,
Warszawa,
Królestwo Polskie.

Ichthyol in Phthisis.—FRÆNKEL has administered ichthyol in doses of 2 to 4 grammes ($\frac{1}{2}$ to 1 drachm) daily to thirty persons affected with pulmonary phthisis, and always observed diminution and even complete disappearance of cough, easy expectoration, diminution of the quantity of sputum, diminution or disappearance of nocturnal sweats, and considerable improvement in the general state and appetite. During three months of observation he convinced himself that râles gradually disappeared in the lungs, although the dullness did not diminish. Secondary unfavorable effects from the drug were not observed; the bad taste may be avoided by taking the drug in capsules. He supposes that ichthyol acts more advantageously than creasote or guaiacol. In cases of phthisis fibrosa he has not seen any good effect from it.

—*Przeglad Lekarski*, No. 11, 1897.

The Treatment of Tabes Dorsalis.—STROZEWSKI ardently recommends Frænkel's so-called compensatory method (*compensatorische Nebungsther-*

apie), consisting of the "repeated teaching of movements" lost through ataxia. Frænkel's method consists of a series of systematic exercises, made, at first, under the control of vision, and afterward, in proportion to improvement, with closed eyes. The principal attention must be paid, not to the rapidity, but to the precision of the movements. He criticises all other methods hitherto known for the treatment of tabes, and regards Frænkel's method as the only one that deserves serious attention.—*Gazeta Lekarska*, No. 5, 1897.

Argonin in the Treatment of Gonorrhœa.—ZYDLOWICZ has applied this remedy in thirty-three cases of gonorrhœa, six of which he described minutely. Of these, six were acute, twenty-six subacute, and one chronic. In the six acute cases, gonococci disappeared from the discharge after from three to thirteen days; in all other cases they disappeared after from eight to seventeen days of the treatment; they did not disappear even after three weeks of the treatment in one case only. Injections are not painful and therefore may be applied in all periods of gonorrhœa; under their influence the symptoms of inflammation diminish and the gonococcus disappears. All this enables the author to conclude that argonin is the best of all known antigonorrhœal medicines, and recommends it warmly.—*Przeglad Lekarski*, Nos. 1–3, 1897.

On the Diuretic Action of Lactate of Strontium.—BRONOWSKI conducted experiments and observations upon this agent, and reached the following conclusions: 1. Being introduced into the circulation of animals, it does not raise the general blood-pressure; on the contrary, diminishes it. 2. Introduced into the blood in overdoses, in proportion to the weight of an animal (more than 0.07 per kilo), it irritates the kidneys. 3. Its diuretic action depends most probably upon the dilatation of the vessels of the kidneys. 4. The increased diuresis is not at all provoked by the action upon the epithelium of the kidneys. 5. Clinical observations prove that lactate of strontium has a favorable influence on albuminuria and diuresis. The author therefore recommends its use.—*Medycyna*, No. 1, 1897.

Poisoning by Hydrochloric Acid.—The cases of poisoning by hydrochloric acid are rare, the general literature containing not many more than forty cases. DR. LANDE describes a case of a woman, of 50 years, who, by mistake, drank about 1 tablespoonful of pure muriatic acid. Besides burning and pain in the stomach, vomiting, diarrhœa, and cramps in the lower extremities, there were observed: (*a*) Absolute loss of tendinous reflexes on the first day of poisoning; this symptom, which disappeared on the second day, has not thus far been observed; consciousness was complete. (*b*) Entire absence of injury of mucous membrane of the mouth. (*c*) Albuminuria, the sediments of the urine containing numerous hyaline and granular casts and purulent corpuscles. (*d*) One day's fever (38.8° C.—102° F.) on the sixth day of the disease, without any apparent cause.

The author warns against the incautious administration of hydrochloric acid, especially in children.—*Gazeta Lekarska*, No. 8, 1897.

Russia.

DR. J. DRZEWIECKI,

РЕДАКТОР-КОРРЕСПОНДЕНТ изъ области русской литературы, касающейся: Общей медицины и терапіи, педіатріи, акушерства, гинекологіи, ларингологіи, отологіи, гигіены, демографіи, судебной медицины, гистологіи, бактеріологіи, анатоміи и физіологіи.

Всѣ періодическія, медицинскія изданія, сочиненія, стат'и, монографіи и т. д., изданныя на русском языкѣ и касающіяся вышеупомянованных предметовъ должны быт' адресованы на имя

ДРА ДРЖЕВЕЦКАГО.

87 Краковское Предмѣст'е,

Варшава.

The Influence of Tobacco-smoking upon the Health.—Wishing to explain how far tobacco-smoking is spread among students and how it acts upon the respiratory and digestive organs, DR. MENDELSON, in 1890, sent questions to all students of the Military Medical Academy and Technological Institute. Every smoker was to give five answers (age, how long he smokes, how many cigars or cigarettes daily, if he inhales the smoke, and if he often suffers from affections of respiratory or digestive apparatus) and non-smokers three, and those who gave up smoking nine. He received altogether 5000 answers. Of 1071 students, 556 were of the medical academy and 515 of the institute. There were a little more smokers,—namely, 51.07 per cent. Among the students of the academy were more smokers than among those of the institute,—of the first, 54.66 per cent., and of the latter 47.18 per cent. The majority began to smoke in the sixteenth, seventeenth, or eighteenth year. On the average, the smoking medical student smoked daily 19.64 cigarettes and the technological students 22.88. Estimating ten cigarettes to have cost 1½d., the author figured out that the student of the Military Medical Academy spent yearly on tobacco £1200,—*i.e.*, a sum quite sufficient for the competent support of forty poor students. The smokers in both institutes show a greater percentage of mortality than non-smokers. Out of 100 smokers 16.09 per cent. fell ill from affections of the respiratory organs, and out of 100 non-smokers only 10.69; of digestive organs, out of 100 smokers, 11.88, and out of 100 non-smokers, 9.92; affected with both apparatus, respiratory and digestive, out of 100 smokers, were 8.77 per cent., and out of 100 non-smokers only 3.22; in general, 36.74 per cent. of smokers and 23.83 per cent. of non-smokers were taken ill. One-third of the smokers began to smoke before the sixteenth year and two-thirds after sixteen. The first became ill oftener than the latter; of the first, 45.83 per cent. became ill and of the latter 32.71 per cent. The health of the technologists is better than that of the medical students; this difference is particularly noticeable in the first semestre, where, of the first, 14.66 per cent., and of the latter 31.53 per cent., became ill. The smoking especially increased the sickliness of medical students of higher courses and technologists of the chemical section. The reason that the technologists are, on the whole, healthier, is that they principally come from the country and, besides, are not tired and fatigued by the "classical system of education."

Sixty-one students gave up smoking; of this number, 20 on account of lung affections; of the latter, 6 cases recovered completely, 10 showed improvement, and 4 none whatever.—*Wratch*, No. 14, 1897.

Myofibrosis of the Heart.—GURVITCH has investigated the anatomo-

pathological changes in the heart-muscles with degenerated connective tissue. His investigations seem to show that there is, besides the forms known, another kind of diffused degeneration of connective tissue, which greatly resembles that of the hardening of the vessels (sclerosis). The author sees, in the development of the connective tissue in the place of the muscular, the condition necessary for compensation,—the degree of degeneration in certain parts of the heart always corresponding to its dilatation. According to him, the cause leading to this form of degeneration is weakness of the heart. The latter is conditioned (1) by old age, (2) mechanical causes (ribium cordis), (3) poisoning (by alcohol) and infectious diseases. —*Inaugural Dissertation*, Dorpat, 1896.

The Treatment of Pneumonia Crouposa.—Roubel, relying upon his own observations, communications of Petrescu, the dissertation of his pupil, Antoniu, and upon the works of other authors investigating the subject of the treatment of croupous pneumonia by large doses of digitalis (highly recommended by Petrescu), reaches the conclusion that this method, being, in fact, nothing but a modification of Traube's method, is not only valueless, but that in many cases it is liable to endanger life. He therefore advises that the method be dropped as soon as possible.—*Wratch*, No. 2, 1897.

Clinical Notes and Therapeutic Suggestions.

Consumption and Insanity.—Dr. Thomas J. Mays, of Philadelphia, concludes: (1) that insanity and consumption were comparatively infrequent in the negro race before the war, (2) that both of these diseases have disproportionately increased in the same race since the war, and (3) that in all probability the causes which give rise to one of these diseases also produce the other. And, furthermore, (1) that both of these diseases are most liable to occur at the same age-period,—that is, between twenty and thirty years; (2) that the family which is burdened with one is also liable to produce the other, this liability being greater in the case of insanity than in that of phthisis; (3) that they are both closely related in personal and family history to idiocy, hysteria, epilepsy, asthma, and to other diseases of the brain and spinal cord; (4) that they are both produced by syphilis, alcohol, overwork, business vicissitudes, domestic trouble, mental anxiety, grief, disappointment, and excesses of all sorts,—in fact, by any agent or influence, such as those named, which vitiate the brain or nervous system; (5) that the insane, the idiotic, the epileptic, the hysterical, the asthmatic, and the members of their families are from three to eight times more prone to become phthisical than persons who are not burdened in the same way; and (6) that those who are confronted by a new and higher civilization, and who are compelled to adjust themselves to these new relations, are excessively liable to fall victims to pulmonary consumption.—*Boston Medical and Surgical Journal*, June 3, 1897.

Hæmoptysis in Non-tuberculous Subjects.—Dr. David Newmann, of Glasgow, concludes some interesting remarks on repeated hæmoptyses in non-tuberculous subjects, with illustrative cases, by the statement that in all cases of hæmoptysis the important point to determine is the source of the bleeding. In the cases described by the author not infrequently the blood escaped in such a way as, had the cause been suspected, at once to suggest the nature of the hæmoptysis, but sometimes in the same case the blood trickled down into the larynx or trachea, and was expectorated as if from the lungs. Hence, the mode in which the blood escapes, or even the impressions of the patient, cannot be taken as a guide in determining the source of the bleeding; it therefore becomes all the more important to carefully employ the laryngoscope or the rhinoscope to establish the precise lesion from which the blood flows. It is believed by many that if blood is seen in the trachea we may conclude that the hæmoptysis is from the lungs. This is not altogether correct. The blood, as he showed in some of the cases reported, may flow into and even collect in the trachea from the higher air-passages; but it may be asserted, as a general rule, that during pulmonary hæmoptysis the trachea is blood-stained, and the blood is intimately mixed with the mucus. Whereas, in hæmorrhage from the larynx or the parts above it, the trachea is seldom stained, the blood expectorated is pure, only on the surface of a mass of mucus, inspissated, or in dry clots. In all cases, if the source of the bleeding is in the larynx or upper parts of the air-passages, the laryngoscope should reveal its source, but perhaps not with one examination only; many careful observations may be required.

In the great majority of cases it is easy to distinguish a pulmonary hæmorrhage from other hæmoptysis, but in a few instances the distinction between the two forms of bleeding is a matter of considerable difficulty. In the absence of any lesion in the upper air-passages to account for it, the bleeding may be safely attributed to a pulmonary lesion, even though there may be no appreciable evidence of disease in the lungs, and on this assumption treatment should be adopted until unmistakable symptoms or physical signs render the diagnosis certain.—*British Medical Journal*, May 29, 1897.

Intubation in Diphtheria.—Dr. T. H. Halsted, of Syracuse, N. Y., reports the result of fifty-seven intubations in diphtheria in private practice before and since the use of antitoxin, and concludes: 1. Laryngeal diphtheria, in any epidemic, is never mild, but has always had a mortality of from 90 to 95 per cent.,—reduced by operation, intubation, or tracheotomy to from 72 to 76 per cent. 2. The report of his cases shows a mortality of intubations without serum of 76 per cent.; in conjunction with serum of 25 per cent., and, eliminating cases of death within twenty-four hours of injection, a mortality of 10 per cent. The reduction of mortality from 76 to 10 per cent. is to be credited to antitoxin. 3. Antitoxin should always be administered as early as possible, and in laryngeal cases without waiting for the bacteriologist's report. If this is done it will usually prevent an extension to the larynx, or, if the larynx is already invaded, an early injection will frequently cure without need of operation. 4. No child should be allowed to die of laryngeal stenosis without an operation, preferably

intubation, and serum should be injected at once regardless of the stage of the disease, as most-desperate cases often end in recovery.—*New York Medical Journal*, June 12, 1897.

The Care of the Perineum in Head-Last Deliveries.—In the *Centralblatt für Gynäkologie* for May 15th, Dr. W. Rubeska, a professor in the Prague school for midwives, remarks upon the paucity of directions in the text-books of obstetrics as to the management of the perineum during the birth of the after-coming head. He quotes a description, by Ostermann, of Berlin, of his method, and then gives an account of his own, which, he remarks, must often have been employed, so simple is it, although the first published description of it appeared only so recently as in 1893, in his "Lehrbuch der Geburtshilfe für Hebammen."

As soon as the child's mouth has cleared the vulva, whether extraction or expression has been employed, he seizes its feet with one hand and lifts it high over the mother's abdomen. Then with the other hand he manipulates the head, stretching the fingers out over the perineum and inserting the thumb into the child's mouth in such a manner as to have it rest on the alveolar arch of the upper jaw. The hand thus has perfect control of the head, the thumb holding it back forcibly if it shows a tendency to advance faster than the elasticity of the perineum warrants, while, at the same time, the outstretched fingers press the cranium forward against the pubic arch, and thus relieve the perineum of its tension. If the greatest circumference of the head has been expelled, the hand readily lifts the head out independently of the pains.

Since the child has its mouth and nose free, it can breathe, and, in case of need, the mucus may be swabbed from its mouth and throat with a flexible catheter; consequently there is usually no longer any occasion for haste in extracting the head. At this time there is no need of traction on the head; the abdominal muscles will drive it out, or it may be lifted through the vulva with the hand. The author thinks his method has the advantages over Ostermann's of simplicity and ease of execution, also that of not requiring the co-operation of the nurse or other assistant. He recommends it on the strength of a large experience.—*New York Medical Journal*, January 12, 1897.

The Use of Ergot in Obstetrics.—According to Dr. Thomas More-Madden, of Dublin, the conditions and circumstances under which ergot may be employed in obstetrics are (1) that the presentation may be natural or cranial, except in some instances of breech presentation, in which it may, possibly, be necessary to deal at once with uterine inertia; (2) that there should be no marked disproportion between the fœtus and mother or any other physical impediment in the genital tract to delivery; (3) that the os uteri, if not previously fully dilated, should be so dilatable as to allow of speedy extraction by the forceps when necessary; and (4) that the preparation selected, the dose, and the method in which it is employed should be well calculated to produce the required effect.

Subject to these conditions, ergot may, with utility, be employed

when actually indicated and judiciously administered either before, during, or after the second stage of labor. That is to say, it may be given before the full dilatation of a dilatable os, (1) in some instances of long delay from uterine inertia in which there is imminent danger to mother or child, or (2) risk of subsequent flooding from further protraction of the case. During the second stage it may be employed (3) in labor rendered abnormally tedious by deficiency of uterine action or otherwise complicated, and in which the presentation is natural and no other impediments to delivery exist; or (4) for the prophylaxis of apparently impending flooding. During the third stage ergot may be resorted to (5) for the expulsion of the placenta when retained by inertia, or (6) for the arrest of loss of blood. After delivery this ecbolic may be employed either immediately, (7) to check or prevent hæmorrhage, or subsequently (8) to produce tonic or permanent contraction, and, by sealing up the uterine vessels, thus lessen the liability to bacteriological invasion or sepsis; or else, at the same time, it may be exhibited (9) for the purpose of expelling clots from the womb and so arresting after-pains. Lastly, (10) in the majority of multiparous patients ergot may be administered during the puerperal period with the object of stimulating the muscular tonicity of the uterus, accelerating the process by which its return to a normal condition after parturition is effected, and thus obviating the future possibility of chronic subinvolution.—*Lancet*, May 29, 1897.

The Duration of Infection in Whooping-cough.—Weill, who, in 1894, expressed the opinion that whooping-cough is contagious only during the premonitory catarrhal stage, has since put his opinion to the test. On various occasions he permitted nearly one hundred young children, who had not previously suffered from whooping-cough, to be associated in the same ward, for twenty days or more, with children suffering from the disease during the stage of whooping. In only one case was the disease contracted, and in this instance the patient from whom the infection was derived was in the very earliest period of the whooping stage. In three small epidemics Weill was able to satisfy himself that infection was contracted from children who had not yet begun to whoop. He concludes that infection ceases very soon after the characteristic whoop commences, and that, therefore, in a family it is not the patient who is already whooping, but his brothers and sisters who have not previously had whooping-cough, who ought to be isolated.—*Lyon Méd.*, May 19, 1897.

Adenoid Vegetations and their Bacilli.—Gourc, from examination of 213 cases, concludes that there is no bactericidal property in the secretion of the glands, and probably none in the nasal mucus. Latent lacunar encysted adenoiditis is a rarity. As regards the bacilli, 25 examinations disclosed none; 37 streptococci, but never pure; 60 staphylococci, pure; and 69 associated with other micro-organisms; other forms of cocci, 41 pure and 54 associated; pneumococci, 3; leptothrix buccalis, 1 pure and 1 associated; and a short bacillus not taking Gram's stain in 1 case. There were hypertrophy of the tonsils in 17 cases; tuberculosis, collateral in 30, hereditary in 18, and personal in 17, but Koch's bacillus was never detected

in the vegetations. Metastatic anginæ and laryngitides no doubt depend on the above bacteria, and some cases of facial erysipelas may be explained by the streptococci. Contraction of the nose, acute arching of the palate, and dental deviations due to hereditary causes, rickets, scrofula, or lymphatism may accompany, but are not results, of adenoid growths. Operation should be complete, as remnants left do not atrophy.—*Thèse de Paris*, No. 175, 1896–1897.

A Rœntgen-Ray Examination in a Case of Asthma.—Dr. Lewy-Dorn relates the case of a woman, 28 years old, who had dry bronchitis with consecutive pulmonary emphysema and asthma, in which, on account of the state of the lungs, a satisfactory examination as to the size of the neighboring organs could not be made in the ordinary way. The Rœntgen rays were therefore employed, and during the examination an asthmatic attack occurred, but it did not interfere with the observation. The left half of the diaphragm was observed to fall rapidly and rise slowly at each respiration, while the right half of the muscle was altogether motionless. This spectacle continued for several minutes, during which time the peculiar rough breathing could be heard distinctly. Then the patient began to cough, and the right as well as the left half of the diaphragm made deep inspiratory and expiratory movement; thick mucus was expelled and the attack was over. The case, therefore, was one of unilateral asthma, and this the author connects with the fact that the bronchial trouble was confined to one lung.—*New York Medical Journal*, June 12, 1897.

Acute Œdema of the Larynx.—Stankowski relates two cases due to iodide of potassium: I. A man, aged 28 years, was suffering from pulmonary and laryngeal phthisis. The laryngeal manifestations consisted in infiltration of the interarytenoid and right aryteno-epiglottic folds. He was treated with potassic iodide with the view of improving the nutrition. In five days a considerable œdema of the left aryteno-epiglottic fold was noticed, which disappeared when the iodide was discontinued. The author gives his reasons for believing that this œdema was due to the iodide, and was not a manifestation of tuberculosis. II. This case occurred in a man, aged 31 years, who had been treated with several courses of mercurial inunction. Some six years after the initial lesion he was given potassic iodide as syphilitic manifestations had again appeared, as well as a solution of iodide in potassic iodide to be applied to a swelling on the lip. After he had been taking the iodide for two weeks he began to suffer from coryza and dyspnœa. There was an œdematous swelling on the right side of the larynx. The iodide was omitted, and the swelling in the larynx soon disappeared. In this case there was no infiltration, and the swelling had not the characteristics of a syphilitic perichondritis. The œdema was unilateral in both cases,—a feature not often met with in cases hitherto recorded. In the first case 12 grammes (3 drachms) of iodide were taken in five days; and in the second case iodide had previously been taken without any evidence of iodism. In both cases the œdema did not appear at the commencement of the treatment with small doses of iodide, as has generally

been known to be the case. The laryngeal symptoms were never urgent, as has happened in most of the recorded cases.—*Münch. med. Woch.*, March 23, 1897.

Action of the X-rays on the Heart.—Drs. Gaston Séguy and F. Quénisset have simultaneously observed that if a long exposure is made to the x-rays certain cardiac disturbances are experienced, consisting in unbearable palpitation and very violent and irregular palpitations. Gaston Séguy had noticed it on himself after numerous observations, while F. Quénisset noted it in a person whom he had treated for some time by x-rays in order to experiment with their therapeutic action. The patient first felt great oppression at the region of the heart, then violent and irregular beats, which became unbearable and dangerous when the x-rays passed through the chest. It was found necessary to place a metallic plate thick enough to intercept the rays.—*Bulletin Médical*, April 21, 1897.

Mammary Cancer.—In the Ingleby Lectures on the operative treatment of cancer of the breast, delivered at Mason College, Dr. Bennett May, of Birmingham, gives the following exposition of the best work which has been done in the treatment of cancer of the breast on the lines of the radical operation described.

The following table shows the recently-published returns of three operators :—

Table of Cases Operated on by the Radical Method and Observed for at least Three Years.

Surgeon.	Number of Cases.	No Local Recurrence.		Local Recurrence.	Percentage of Cures.	Date.
		Cured.	Died.			
Rotter, ...	10	6	2	2	60.0	1896
Helferich, ...	35	10	11	14	30.5	1896
Watson Cheyne, . .	21	12	4	5	57.0	1896
Total, ...	66	28	17	21	42.5	

Percentage of cures (average), 42.5. Percentage without local recurrence, 68. Mortality of operation, 0.0.

Bergmann does a bold operation on ordinary lines, removing the breast widely with the paramammary tissues, systematically clearing the axilla, and, in some cases, removes the sternal portion of the pectoralis major. His latest statistics, however, do not come down later than 1885, when he was less careful about clearing the fascia, etc., than now, and they are not included in this table.

Rotter, of Berlin, does a wide operation. He removes the whole of the sternal part of the pectoralis major and the pectoralis minor. He also removes the clavicular part of the major when the infraclavicular glands are enlarged. In some cases he removes the supraclavicular glands, but does not resect the clavicle.

Helferich, of Greifswald, does a similar operation, but without removing the pectoralis minor.

Watson Cheyne does a wide, clean operation on ordinary lines, occasionally removing the sternal portion of the pectoralis major. He does not ordinarily remove the supraclavicular glands. His results, which I take from the Bradshawe Lecture, February, 1896, seem the best recorded, —namely, 21 cases with 12 cures (57 per cent.):—

TABLE OF STATISTICS SHOWING GRADUAL IMPROVEMENT IN RESULTS.

Operator.	Date.	Cures
Billroth,	1876	4.7 per cent.
Esmarch,	1876	11.8 "
Volkmann,	1880	17.8 "
Kuster,	1885	21.0 "
Konig,	1885	23.0 "
Bergmann (von),	1885	32.0 "
Average of Rotter, Helferich, and Watson Cheyne,	1896	42.5 "

"Looking to my own results, I have seen that the effect of thorough removal is very marked indeed.

"As to the limits of the operation for cure and non-operable cases a judicious and careful selection of cases should be exercised, and involves consideration of the constitutional state of the patient as well as the local conditions. Among non-operable cases I class:—

"1. Large medullary cancers.

"2. Scattered tubercles in the skin and œdema.

"3. Internal metastasis of all kinds.

"4. Œdema and solid enlargement of the upper limb.

"This latter I regard as an emphatic *noli me tangere* and contra-indication. This waxy œdema is one of the most distressing features of the disease. I am sorry to say I know no means of relieving it. I have tried puncture, but it is worthless. Amputation at the shoulder-girdle has been practiced on a few occasions, and I have been asked by patients to do this; but even this heroic remedy does not arrest the progress of the disease.

"Among debatable cases I include:—

"1. Enlargement of the supraclavicular glands. I have hitherto regarded this as an absolute contra-indication, but I am inclined now to extend the field of operation to some of these cases, clearing the supraclavicular fossa as an addition to the ordinary operation. I would limit it, however, to small and movable tumors, or to the condition I previously indicated of the highest axillary gland being found infected. Fixed and painful enlargements or with œdema of the limb should not be touched. Before long we may expect some further evidence of the merit of this addition to the operation, as it is being extensively practiced by some surgeons.

"2. Cancer in both breasts. The appearance of the disease in the other

breast is now commonly regarded as a late general infection, and not as an independent growth. It is explained by the free anastomosis and intersection between the lymphatics of the two breasts. It is rarely desirable to operate, but Jacobson records a satisfactory case. The surgeon must consider the probabilities in each case with the interval that has elapsed and the conditions of the reappearance. It happened in two of my patients. In one of them I operated on the second breast with unsatisfactory results; in the other I did not operate on the second breast. The disease reappeared in this one two years after removal of the first, and very curiously it was preceded by enlargement of the axillary glands on the corresponding side.

"*Diagnosis.*—The importance of early operation, obvious as it is, cannot be too strongly enforced. It is unfortunate that the disease is frequently so insidious in its onset that considerable advance has been made before the patient is aware of its existence. Another great hindrance to early operation is the difficulty of diagnosis in the incipient stages. The first care should be to place the patient in favorable circumstances for the examination. The chest should be quite undressed so as to admit of easy examination of the pectoral region and axilla as well as of both breasts.

"In a matter of this urgency and importance I agree with those who think accuracy of diagnosis should be subsidiary to promptitude in treatment, as there are cases in which it is impossible to be accurate without exploratory incision. The two conditions which give the greatest trouble are chronic inflammatory hyperplasia and the case of a tense cyst situated deeply in the breast. The latter is distinguished by its mobility, globular outline, and verified by the exploring needle, which should never be overlooked as an aid to diagnosis. Chronic mastitis is often much more difficult to discriminate, and some experience in handling and exploring these indurations is needed. Students are taught to recognize cancer by the well-known evidences in a developed stage when the malignant characters are patent to observation, and we are all more or less under the influence of these teachings.

"In the simple disease which often follows lactation or weaning the thickening is sensitive to the touch, firm, and elastic, but the outlines are more diffused than in cancer. On pressing the mass against the chest-wall the induration and sense of tumor disappear. Then, again, the area of breast occupied is more diffuse and larger, or both breasts may be similarly affected. The same sort of dimpling of the skin may occur as in cancer, but this is quickly followed by fluctuation and suppuration.

"It is prudent to come to a decision at the first interview; that is to say, if the surgeon is unable to convince himself of the non-malignant nature of the neoplasm it is better to take action at once. I deprecate the practice of keeping cases under prolonged observation to see how they will develop. Patients either get restive and will not consent to remain long in doubt, or, what is more common, if told to report themselves in a month they turn up in six, when the mischief is done. Moreover, the sequel in about five cases out of six shows the delay to have been unwise.

"A very important question arises as to the existence of any direct

etiological relationship between chronic mastitis and cancer. It is generally assumed that a relationship exists, that chronic hyperplasia is likely to become cancer, but the stages of development from this supposed precancerous state have not been traced. There seems distinct clinical proof that cancer may be grafted on to it if prolonged. I believe this did take place in the case of one of my patients. This lady, aged 48 years, had chronic mastitis, and after an interval of three and one-half years from its first incidence a small scirrhous nodule appeared on the site. This made me regret being too precise and nice in my diagnosis.

"There can be no doubt that before proceeding to do one of these wide operations we must first positively satisfy ourselves that the disease is malignant. In a large proportion, too many indeed, this is only too obvious. In doubtful cases a preliminary exploratory incision is to be made, and precaution is to be taken against auto-infection. The knife should be changed and the hands of the operator as well as the surface of the breast washed and the incision plugged with sterile gauze.

"Can we rely upon the naked-eye appearance of the cut surface? I think so. The fresh-cut section of cancer is unmistakable, quite different from the leathery toughness of chronic mammitis. Some contend that the surgeon, if not an experienced pathologist himself, should always be accompanied by one with his freezing microtome. This, however, is a luxury which cannot always be had unless he is to be an official provided at State expense, as suggested in America. One is very glad of the opinion of a skilled pathologist, but in case of a conflict of opinion the responsibility of deciding and acting would remain with the operator.

"In closing let me summarize by saying that so far as is at present known our only hope of advancement lies in the direction of more thorough and more early operation. The limit of what is possible in the former direction will soon be, if it is not already, reached. The result must carry conviction that we may hopefully anticipate a real cure in at least 30 or 40, or, some would say, 50 per cent. of our cases. I would not like to place 30 as a limit, but it is with somewhat chastened hope that I look for anything beyond. Longer observation is required, particularly as to the future development of those cases who pass the three-year limit. Even now, however, the operation in too many cases is not practiced to the best advantage, and is not used for all it is worth. Certainly some of the disrepute and prejudice which have surrounded it may fairly be ascribed to the incomplete and inadequate manner in which it is too often done by men who have had no proper surgical training, and whose ill results serve to injure the cause as a whole, and to reflect prejudicially on the work of others. The fact is it has been every one's operation because it is thought to be easy, but now that surgery is specialized to such an extent these happy-go-lucky methods should be abolished in this as in other branches of surgery."—*British Medical Journal*, May 29, 1897.

Indications for the Removal of the Uterus and the Ovaries when Operating for Septic Pelvic Disease.—Dr. Fernand Henrotin, of Chicago, reaches these conclusions: 1. In operating for pelvic septic disease, either

by the abdomen or the vagina, the condition of the ovaries should be the first object of special consideration, and no part of such an organ, when apparently healthy, should be removed. 2. When the ovaries, an ovary, or a part of an ovary is left, the uterus should never be removed unless it is the seat of otherwise incurable disease. 3. The removal of diseased Fallopian tubes, even in their entirety, is no warrant for the removal of healthy ovaries or a healthy uterus. 4. Even if the tubes and ovaries are entirely removed, the uterus should be spared, if its removal will entail appreciable increase in the danger of the operation to the patient. 5. In very young patients, or such as have what is known as infantile uteri, the uterus need not be removed. 6. In the vast majority of cases, when, in operating for pelvic abscess, it becomes necessary to remove the ovaries, it is most advisable to also remove the uterus, because it serves no further purpose in the economy and because it remains a serious element for future harmfulness. 7. When, in operating by the abdominal method, the cervix is found apparently healthy, it is advisable to make a supravaginal amputation and to leave the cervix, putting in stay-stitches, as recommended by Baldy, to prevent displacement of pelvic fasciæ.

With greater experience to be gained principally by examination of ablated uteri, we may learn to distinguish inoffensive varieties, and, if so, will leave all such undisturbed, for the smallest atom of human flesh which is harmless and does not disfigure should always be sacred to the surgeon. —*Medical and Surgical Reporter*, April 24, 1897.

New Local Anæsthetic.—Hirschberg announces the receipt of a new local anæsthetic, to which he at first gave the name of "amidin." He found its anæsthetic effects on the eyeball to be prompt and entire, no local irritation and no pupillary dilatation following its use. He used it with success in the extraction of a traumatic cataract, the presence of which had already given rise to inflammation.

It is closely allied to phenacetin, and has a powerful local anæsthetic action. Although it is highly poisonous, if administered internally, even in minute doses, no local poisonous effect has been noted. It is soluble in boiling water, and should be dissolved in a porcelain vessel, as it causes glass containing an alkali to lose a portion of the latter, which clouds the solution. It has finally been baptized with the name "holocain." The experiments at Hirschberg's clinic were continued, some forty-five cases having been subjected to its action. Anæsthesia came on in from fifteen seconds to one minute, and lasted ten minutes. The instillation of holocain was accompanied by a slight burning sensation, no greater than that produced by cocaine. The dryness of the corneal epithelium produced by cocaine was here wanting. No pupillary enlargement and no effect on the accommodation were observed.

It was, moreover, found that holocain could be used in cases where cocaine was either contra-indicated or failed to work,—as, for instance, where there existed a considerable inflammation of the conjunctiva bulbi, attended by swelling. Its action was here entirely successful.

The solution of holocain needs no sterilization, being, in the strength of 1 per cent., itself bactericidal.

Holocain possesses strongly poisonous properties, acting thus in one-fifth the strength of cocaine. When instilled in the conjunctiva no injurious effects have been observed.

In this new agent, then, we have a remedy that is likely to supplant cocaine in many cases of ophthalmic surgery. Among its advantages may be reckoned the following: 1. It does not enlarge the pupil. 2. Does not affect the accommodation. 3. Does not increase intra-ocular pressure. 4. Promotes antisepsis. 5. May be used when cocaine is contra-indicated.

Per contra, its poisonous nature prevents it from being used subcutaneously. And, as it does not contract the vessels, operations done under its influence are likely to be attended by more hæmorrhage than those performed under cocaine.—*Boston Medical and Surgical Journal*, June 3, 1897.

Indications for the Use of Iron.—In a clinical lecture delivered before the Medical Society of the Woman's Medical College of Philadelphia, Prof. Frederick P. Henry reviewed the main indications for this remedy in *chlorosis*. This affection, in its incipiency, is characterized by a normal number of corpuscles, each one of which is deficient in hæmoglobin, which is the chief iron-containing constituent of the body. Iron is a specific, and the demand for it is so imperative that it seems immaterial what preparation be employed. There is, however, always room for selection, some patients being unable to tolerate any but the blandest preparations, such as the lactate or the potassiotartrate, while others experience no inconvenience from the use of the sulphate, the saccharated carbonate, or the ferrum reductum.

If the tongue is heavily coated, the breath offensive, and the bowels constipated, the administration of the iron should be prefaced by a purge. In some cases, however, even though there be no sign of digestive disorder, the stomach will not tolerate any but the blandest preparations, such as the lactate or the potassiotartrate, which are the least constipating of the various preparations of iron. When well borne, one of the best preparations of iron is the sulphate. It is generally administered in pill form, with equal parts of potassium carbonate. Such a pill, first recommended by Blaud, and therefore known as Blaud's pill, was held in great esteem by the late Professor Niemeyer, to whose indorsement its general use is largely owing.

In anæmia, dependent upon malarial poisoning, iron may be advantageously combined with quinine or arsenic. The citrate of iron and quinine, or the arseniate of iron (the latter in doses of $\frac{1}{40}$ grain—0.0015 gramme—three or four times daily; the former in doses of 2 to 5 grains —0.15 to 0.35 gramme—thrice daily), may be employed under these circumstances.

In the anæmia, which is so common an attendant of syphilis, an excellent combination is the tincture of the chloride of iron and corrosive sublimate, as in the following prescription :—

℞ Tinct. ferri chloridi, ... ℥ss (15.00 grammes).
Hydrarg. chloridi corrosiva, . . gr. j (0.07 gramme).
Glycerinæ, ... ℥ss (15.00 grammes).
Aquæ, ... ad ℥iij (90.00 grammes).
M. Sig.: One teaspoonful in water, thrice daily, after meals.

In sloughing, phagedenic chancroid, the potassiotartrate of iron has been employed with apparent benefit.

In the *anæmia of heart disease*, which is often quite prominent, so much so that a "cardiac cachexia" is described by some writers on diseases of the heart, iron may be combined with digitalis. The two drugs may be given in pill form, in which case the powdered digitalis would be employed; or the tincture of the chloride of iron and the tincture of digitalis may be mingled in the same prescription. The mixture is certainly not an elegant one, owing to the tannin contained in the digitalis, but there is no doubt as to its therapeutic activity in suitable cases.

Amenorrhœa and Menorrhagia.—Iron is largely used as an emmenagogue, but is only efficacious in such cases of menstrual suppression as are due to an impoverished state of the blood. On the other hand, in certain cases of chlorosis there may be a tendency to excessive menstrual discharge, these cases being designated by the term "chlorotic menorrhagia." For the cure of this form of menorrhagia, iron is the best remedy, and the more astringent preparations, such as the tincture of the chloride or the liquor ferri citratis, should be employed. It is scarcely necessary to say that, before prescribing iron in such cases, the physician should be assured that the anæmia is the cause and not the consequence of the menorrhagia.

Rheumatism.—Iron was at one time much employed in the treatment of rheumatism, but has been entirely superseded by the salicyl compounds. It is, however, an excellent prophylactic against relapse, and for this purpose a non-official preparation, iron salicylate, may be employed for some weeks after the recovery from the attack.

Erysipelas.—The tincture of iron chloride was at one time regarded as a specific in the treatment of erysipelas, and it is still largely employed in this disease. To obtain good results, it must be given freely,—that is, to the extent of at least 1 or 2 drachms (4 or 8 grammes) daily. It has been given in much larger doses and, it is claimed, with benefit. For example, Mr. de Morgan, of the Middlesex Hospital, London, has given so much as two ounces of this drug in twenty-four hours in cases of erysipelas. While benefit seems to have been derived from this method of treating erysipelas, it is a significant fact that it is most marked when the internal use of iron is combined with external applications, and especially such as exclude the air from the affected region.

Neuralgia is often dependent upon anæmia, and when this is the case iron will be found of service. The saccharated carbonate is a favorite preparation in such cases, but the necessity of administering it in huge doses, as is done by some practitioners, is doubtful. This salt has been prescribed in doses of ½ drachm (2 grammes) thrice daily. Since, as the author stated, there exists in health only forty-five grains of iron in the

blood, it is impossible for more than a fraction of these doses to enter the system.

Chorea, when associated with anæmia, may be successfully treated with iron, and in this disease, also, the saccharated carbonate has been given in the same large doses.

It is impossible to enumerate all the diseases for which iron has been administered with more or less benefit. The above-mentioned affections are those in which the remedy is most efficacious. The topical uses of iron are almost as important as the internal. In the form of Monsel's solution (liquor ferri subsulphatis) it is probably the most styptic remedy in the pharmacopœia. It may be successfully employed to check hæmorrhage in cases of cancer of the cervix and in bleeding piles. It has also been injected into the uterus in cases of post-partum hæmorrhage, but this practice can scarcely be recommended, as this salt of iron coagulates the blood in the uterine sinuses, and these coagula, by their decomposition, may give rise to septic infection. The topical effect of iron is not only manifested externally, but it is highly probable that its stimulant effect upon the appetite and digestion is, in part, due to its astringent and tonic action upon the gastric mucosa. This same astringent action renders it of great service in many obstinate forms of diarrhœa, especially in children. I have found the liquor ferri pernitratis successful in checking diarrhœa which had resisted bismuth, opiates, and the vegetable astringents.—*Medical and Surgical Reporter*, April 24, 1897.

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Treatment of Tuberculosis.—DR. E. A. DE SCHWEINITZ, gave a *résumé* of experiments made in the production of a tuberculosis antitoxin. Judging from his own results and a study of those obtained abroad, it was possible that an antitoxin could be produced for tuberculosis, but treatment by this method, the author thought, was still in the experimental stage, and would probably remain so until it became possible to protect guinea-pigs against tuberculosis and cure them when infected, as was done in the case of diphtheria with diphtheritic antitoxin.

DR. J. MCFARLAND, of Philadelphia, stated that he had devoted more attention to antituberculin, and gave reasons for his belief, entertained from the first, that tuberculin must fail. Among these was the pathological fact that tuberculosis was an inflammatory, not a toxic, condition. Many cases progressed to the extent of producing considerable destruction of organs before constitutional conditions manifested themselves. Finally, when the tuberculous nodes began to disintegrate, other germs appeared. The reader disclaimed originality in the use of antituberculin, mentioning the work of Paul Paquin and others. It was not irrational to suppose that it might add to the resistance of the tissues, or prevent breaking down of those in which the tubercle bacilli were encapsulated, thus limiting their spread to others. In doing this it would slow the pulse, stop hectic, etc. The animals which he had experimented upon had not recovered, but life seemed to have been prolonged. Moreover, guinea-pigs, it was to be remembered, were extremely susceptible to tuberculosis, and, because an agent might not be altogether successful in them, it did not prove that it would not be in man. The guinea-pigs on which he had practiced immunization longest

were still alive, but he could not say that they had not tuberculosis, since there were enlarged glands. He had found the tuberculin harmless in both healthy and tuberculous guinea-pigs. In man the remedy had been applied systematically in about 20 cases. He thought 1 could be reported as cured, 1 as very encouraging, 1 as distinctly better, 3 decidedly improved, 5 improved somewhat, 7 not definitely changed, and 2 worse; 3 subjects had died, but not because of the treatment. Urticaria was almost uniformly present, which might be accounted for by the fact that serum of the ass was used, which was more irritating than that of the horse. There was some pain in the back and jaw.

Dr. D. L. Rochester, of Buffalo, gave some experience with different methods of treatment of tuberculosis, including the use of Paquin's tuberculous antitoxin and Vaughan's nuclein. Paul Paquin's tuberculous antitoxin was of no value when phthisis was at all advanced, and he had been compelled to discontinue it by the patients themselves, because of dermatitis and pain. As to Vaughan's nuclein, it had been a benefit in all cases but one. It did no harm if the injections were not too rapidly increased. One patient recovered, although there was a cavity at the beginning of the treatment, two years ago. Yet, without exercise and fresh air all efforts must count for naught.

Dr. L. F. Flick had used iodoform inunctions in tuberculosis about eight years. The conclusions drawn from over one hundred cases were that it was unsafe to form an opinion of a treatment of tuberculosis within a short time after its commencement. Unless the case has stood the test of a cure a number of years it could not be placed among the cures. He was now compelled to report many patients as dead whom he had reported cured two or four years ago. Mere increase in weight and improvement in symptoms were no evidence of permanent cure of tuberculosis. In his earlier cases he must report at least 80-per-cent. mortality to-day.

Dr. S. Solis Cohen could not agree with the last speaker that a remedy could not be said to have cured tuberculosis should the patient die years afterward. There might be re-infection. Then, a remedy might be of great value in causing improvement, prolonging life, and checking the active pathological process.

Curability of Pulmonary Tuberculosis.—Dr. E. B. Borland, of Pittsburgh, stated 25 per cent to be much too low an estimate of the total number of infections. The author quoted autopsy statistics from which he concluded that fully 50 per cent. were infected at some period of life, two-thirds of them with the pulmonary form. As the total death-rate gives only 14 per cent. as due to tuberculosis, it becomes evident that the disease is not as fatal as is generally believed. There must be many spontaneous cures. No antitoxin discovered having been able to cure the affection, the physician would do well to make the best use of older methods. Tuberculosis uncomplicated by sepsis could be considered a curable disease in the sense of being held in abeyance, provided the vital resistance of the individual were kept up to the normal standard. Nature had been known completely to eradicate tuberculosis in a number of instances. Nothing could pre-

vent infection when three conditions were present—debility, an ulcerative process, and tubercle bacilli.

Dr. Klebs, of Citronella, thought it would be a dangerous conclusion to infer that experiments with tuberculin, etc., made in laboratories were without value, and that we must limit ourselves to clinical observations. Scientific research would thus be made to cease. Tuberculosis was so various in its manifestations that long observations in experimental research were necessary to establish the value of a remedy against it. The author thought the State should erect institutions for the treatment of tuberculous patients, as in them they could best be taught to carry out hygienic measures, proper disposal of the sputa, etc.

Dr. Herrick, of Cleveland, was inclined to regard tuberculosis as due to disturbances of the blood-making processes. He should never look for a specific agent against tuberculosis. We must go back to the physiological principle in treatment and prevention.

Deformities of the Chest.—Dr. Woods Hutchinson, of Buffalo, stated that there were two forms of chest: (1) the quadrupedal, in which there was great antero-posterior development; (2) the chest in which the lateral expansion seemed to have gone on at the expense of the antero-posterior development. The former existed in dogs and lower animals with the exception of the bat. As one approached man the lateral expansion became greater. The author argued that the development of the chest by lateral expansion in man and his nearer ancestry was due to the upright position and swinging of the arms. Taking 100 as the basis, the following index was given: Proportion of depth to breadth of chest in man, 71; dog, 125; fœtus, 103; infant, 87; tuberculous chest, 77. The index for length was also given. Chests showing a tendency to become diseased, especially tuberculous, were narrow chest,—*i.e.*, showing a tendency toward the ancestral type. He had at one time accepted without investigation the notion of a flat chest in tuberculous patients, but on investigation had found that this flatness was always, or nearly always, only apparent; that there was in reality less breadth than normal, and the apparent flatness was due, he thought, to lack of flat surface on which the shoulders could rest, these rolling forward and giving a hollow appearance across the chest. Reversion to the primitive type in circumstances not suitable to it was the starting-point for disease. The explanation of the fact that the lung was the organ most frequently attacked by disease, especially by tuberculosis, was that in the light of ancestral development it was the youngest organ of the body.

Management and Treatment of Malignant Types of Croupous Pneumonia.—Dr. D. S. Campbell, of Detroit, divided the treatment of croupous pneumonia into two classes—the mild ones, which required little treatment, and the severer ones in which there was high fever with tendency to heart paralysis. It was in the latter that he had found cold the most valuable heart stimulant and antipyretic. Cold applications were usually indicated, but in very obstinate cases the cold bath should be employed.

Dr. H. O. West, of Galveston, thought the author had emphasized too

strongly the purely mechanical effects of pneumonia and the fever element, and had overlooked the toxic influence.

The Hot Bath in the Treatment of Pneumonia.—Dr. J. Eichberg, of Cincinnati, praised the effects of the hot bath used systematically in the treatment of pneumonia. At first he had used it as an antipyretic, repeating it only when the temperature rose above 103° F. (39 4° C.), but subsequently repeated it every three hours, regardless of the temperature. It had a marked influence on the nervous symptoms, one of which was indefinable unrest, which it caused to disappear; the pulse improved, delirium subsided, the respirations diminished; the patient was enabled to sleep. The temperature of the bath was from 90° to 110° F. (32.1° to 43.1° C.), according to circumstances; it was continued ten minutes.

Cheyne-Stokes Respiration.—Dr. N. S. Davis, Jr., of Chicago, described characteristic Cheyne-Stokes respiration. In chronic cases with weariness of respiration, treatment of this condition was important, although his own success seemed not to have been great, and he had tried various drugs, such as nitrites, strychnine, etc. Cheyne-Stokes respiration occurred at times in various maladies, but most frequently in uræmia and cerebral affections. It had also been produced experimentally. Its exact nature was unknown. Undoubtedly the best treatment was that directed against the maladies causing it.

Multiple Neuritis Following Influenza.—Dr. H. B. Allyn, of Philadelphia, expressed the opinion that influenza was not an infrequent cause of neuritis, sometimes of multiple neuritis. Personally he had seen more cases of neuritis in influenza the past year than in the previous five years, and more in mild cases of influenza than in severe ones. It was probable that some cases of supposed neuralgia were cases of a moderate degree of neuritis.

Leukæmia.—Dr. J. B. Herrick, of Chicago, reported a case of acute lymphatic leukæmia with streptococcic infection. The patient was a saloonkeeper 27 years of age, who had been quite well a few weeks before the author saw him; he was then under the care of a physician, who stated that he first had a sharp attack of sore throat, with recurrence after a week, and then rapid enlargement of the glands of the neck, axilla, and groin. The spleen was enlarged. He was under Dr. Herrick's observation only three days before death. Besides lymphatic enlargements and increase in the size of the spleen, there were numerous retinal hæmorrhages, pallor of the skin and mucous membranes; hæmorrhagic tendency, particularly marked in the nose; and malaise. The blood was examined once, and showed great increase in the white corpuscles compared with the red. Streptococci were found, and the question arose whether the acute leukæmia was due to streptococcic infection in the throat. It seemed quite certain that leukæmia had not existed prior to the throat infection.

Chronic Inflammation and Ulceration of the Duodenum, with Resultant Reflexes.—Dr. J. M. Alten, of Kansas City, Mo., stated that this condition of the duodenum was very frequent, although it had had received very little

attention in text-books. He thought he did not exaggerate when he stated that in his experience as many as five or six hundred cases in which there was a question between duodenal and gastric trouble had come to autopsy and a decision was rendered from gross and microscopical appearances. Very common causes of various reflex nervous symptoms, including such grave conditions as epilepsy, melancholia, and insanity, were chronic inflammation and ulceration of the duodenum. The most common origin of the latter was in typhoid fever, and it was seen in phthisis pulmonalis, chronic dysentery, acute irritation, etc. He had investigated thirty cases of diabetes mellitus, in all made a diagnosis of chronic inflammation of the duodenum, and confirmed it by autopsy in seven. Was the relation between the two direct, through interference with the digestive function in the duodenum, or was it indirect, through reflex interference with the nervous mechanism controlling sugar-formation? Treatment included attention to gastric and rectal feeding. Epilepsy of this origin could be cured if treatment were begun before the second year of its existence.

Dr. Boardman Reed queried whether some of the cases might not have been due to disturbances of other portions of the gastro-intestinal tract and the nervous symptoms caused by toxæmia, instead of being reflex.

Dr. Alten did not believe that there could be absorption of toxins in the gastro-intestinal tract without a lesion of the mucous membrane.

Gout.—The discussion on this subject was opened by Dr. Woods Hutchinson, of Buffalo, who called attention to the universality of gout, not only in man, but also in the higher species of animals. Lithæmia was a partial reversion to the avian or reptilian type in the metabolism of the cells. The same elements produced by the ultimate metabolism of our bodies caused in us gout, while in birds or reptiles it was in harmony with the normal health, and gout in them was the result of a further reversion. The same law could be traced even to plants. Treatment consisted in the employment of any means to keep the tissues up to the highest possible degree of metabolism and vigor, exercise being the most important feature.

Dr. Charles Stockton, of Buffalo, stated that gout was a disease to which certain individuals were predisposed, and which depended for its development upon causes largely unknown. Laziness, full nitrogenous diet, and the use of fermented liquors predisposed to the disease. So-called lithæmia, as the term was commonly applied, was not gout, but an auto-intoxication dependent upon gastro-intestinal derangement. The relation of the food to gout should he carefully ascertained in each case.

Dr. T. B. Futcher, of Baltimore, read a paper on the relation of the alloxur bodies to gout, or a uric-acid diathesis, with demonstration. From his experiments the conclusion was reached that it was very doubtful whether there was any connection between the abundance of the Neisser granules in the blood and the alloxur bodies in the urine, and the blood of persons free from gout contained as many of the granules as that of gouty subjects.

The Ocular Manifestations of Gout.—Dr. Charles A. Oliver, of Philadelphia, recognizing that all of the tissues of the eye might manifest gouty

inflammatory conditions, considered these in detail, beginning with the lids and conjunctiva and proceeding to the retina and optic nerve. In gouty inflammation of the lids, more especially of the upper lid, there was swelling,—tumefaction,—which came on quickly and passed away quickly. For this condition he recommended heat. He found several calcareous infarcts in the conjunctiva near the Meibomian glands of one man, who refused to believe until these had been shown him that he was gouty. Soon afterward he had gouty joints. Gouty manifestations in the eyes often caused lancinating pains, quickly disappearing. They seldom caused ulceration. Inflammation in the back of the eyeball sometimes extended to the optic nerve itself, even as far as the chiasm.

The Relation of Uric Acid to Neurasthenia.—Dr. F. S. Pearce, of Philadelphia, stated that so far as the relation of uric acid to neurasthenia was concerned, diet was an important factor, but underlying it all in many instances was an hereditary instability of the neurons, which could be controlled to an extent, but not eradicated. The dietary should be looked to in the correction of the faulty metabolism, also rest of body and mind, suitable diversion, massage, tonics, etc.

The Treatment of Gout.—Dr. H. C. Wood, of Philadelphia, spoke on the treatment and management of gout. He hardly knew what to say, for he was expected in fifteen minutes to epitomize the wisdom of the ages with regard to what was probably the most frequent of all conditions among what had been called the better class of the human race. He wished it clearly understood, in the first place, that all our scientific knowledge of gout at present amounted to little more than a mass of trundling expectation upon which hereafter was to be built some true knowledge. In his opinion there were three great manifestations of the same thing universally allied. They were rheumatoid arthritis; podagra, or true gout; and articular rheumatism. We must not attempt to treat gout, but treat the individual who came before us. As to diet, it is well known that Sydenham believed that gout was made worse by red meats. Dr. Wood had seen gouty patients in whom a single piece of roast beef would precipitate a furious attack. On the other hand, he had seen many gouty people who could not get well unless they were put upon red-meat diet. There was no diet for the gouty, but there was a diet for the individual. Nevertheless, in the large majority of cases, sugars and starches had to be cut off. But in spare gouty subjects farinaceous diet might be essential. Milk probably suited the largest number of gouty patients. In the matter of exercise, we must give the right measure to the individual patient. But patients who could take little when they first came under the physician's control could gradually be led up to the point of taking a great deal of exercise, and this was essential for prevention of further attacks. The author, alluding to the best way to give salicylates in order that they might not disturb the stomach, states that the trouble arose usually from the fact that the salicylate of sodium was employed. Strontium salicylate was less disturbing. In some instances it agreed better with the patient when combined with digitalis and strychnine. Medicines, however, would not eradicate the diathesis.

The Cardio-vascular and Renal Relations and Manifestations of Gout.—Dr. N. S. Davis, Jr., stated that the atheromatous changes which took place in the arterioles throughout the body, including those of the kidney, in the gouty subject were too well known to call for mention in detail. But some points in connection therewith had been referred to only in a broad way in the books, and were often overlooked. One of these was the gradual progress of the renal disease, the organ being affected in spots, with intermissions in the degenerative changes which were microscopical in size, until finally large areas were involved. In these cases the glomeruli and tubules were attacked in a way at times to cause scarcely an appreciable symptomatology, whereas the same changes coming on suddenly, as in cases of a different etiology, caused striking clinical and urinary manifestations. The arterial changes in the nervous system led to various nervous disturbances by interference with the nutrition of nerve-centres. Cerebral manifestations might arise from uræmia or from thrombosis of the cerebral arteries.

Dr. Tyson said that Heberden's nodosities did not mean gout, and also the fact that in the treatment or prevention of gout continuous use of alkaline waters was of great benefit, especially the foreign Vichy. Citrate of potassium was good.

Rheumatoid Arthritis.—Dr. David Riesman, of Philadelphia, preferred the term arthritis deformans used by Virchow. Heberden's nodes were manifestations of rheumatoid arthritis rather than of gout. The theories which had been advanced in explanation of rheumatoid arthritis, or arthritis deformans, were: (1) that it was a form of chronic rheumatism; (2) that it was a mixture of inherited rheumatism and gout; (3) that it was of nervous origin; (4) that it was caused by a specific germ. The author thought the third was most in consonance with the symptomatology, etc. He related a case showing apparent benefit from strontium bromide. It had relieved the pain and perhaps had eliminated the disease.

Anæmia.—Dr. Alfred Stengel, of Philadelphia, stated that the studies of the blood by Virchow, Cohnheim, and others marked an advance in our knowledge of anæmia. It was an error to consider the blood from the stand-point of the corpuscular element alone. The tendency of the profession to regard the corpuscular element as the criterion from which to estimate anæmia needed correction. More attention should be given to the plasma. The author considered the several forms of anæmia or conditions in which anæmia was manifest—chlorosis, chorea, pernicious anæmia, etc. The term splenic disease ought not to be used—he knew of no disease which should be dignified by that title.

Dr. A. E. Taylor stated that the most urgent need was an instrument to take the place of the hæmoglobinometer, as this instrument was very unreliable. The oxygen-carrying power of the blood was far in excess of the needs of the tissues, and the evil effects in anæmia were obviously not due to disturbed oxygenation. The author believed that the chemical study of the blood would henceforth prove far more important than the microscopical study.

Drs. S. M. Hamill and D. L. Edsall, of Philadelphia, alluded to fer-

ment power of the saliva in anæmia, and reached the conclusion that anæmia *per se* did not give rise to noteworthy changes in the ferment activity of the saliva.

Optic Symptoms in Anæmia.—Dr. W. C. Posey stated that, while examination of the fundus often gave indications of anæmia, it did not always do so, especially in cases of anæmia of moderate degree. In chlorosis ocular manifestations were more frequent, the author thought, than was commonly supposed, for, in nearly every case in which the hæmoglobin was markedly reduced, he had found changes in the fundus. The most common change was a dull, lustreless, grayish appearance of the nerve. In pernicious anæmia clinicians had observed retinal hæmorrhages, but they were not so uniformly present as some had supposed. As a rule, they occurred in the advanced stage. In initial anæmia from loss of quantity of blood there were seldom ocular changes unless some other factor than loss of blood existed.

Dilatation of the Stomach.—Dr. Max Einhorn, of New York, referred to a paper in which Senn had reported fifteen cases of stricture of the pylorus, and asserted that the condition was one for surgical treatment; also to a paper which he had himself read before the German Medical Society in New York, in 1894, in which he used the name "ischochymia" to convey the idea of stagnation of food in the stomach as the principal symptom of the affection. Four cases of stricture of the pylorus were recorded in the latter in which operation had been successfully performed, besides several cases of malignant disease of the pylorus in which gastrostomy had proved of temporary benefit. The author divided the cases of ischochymia into two classes: (1) cases in which an operation was indicated, whether the stricture were malignant or benign, and (2) cases treated by palliative measures. The cases of benign stenosis of the pylorus submitted to operation numbered ten. In all of the cases operated upon the diagnosis was completely confirmed. Of the ten cases eight resulted in cure; two were advanced, and the shock of the operation was fatal. In the cases of malignant stricture of the pylorus, diagnosis based on the lactic-acid test and presence of tumor, the majority of the patients who survived operation gained in weight and were made more comfortable than by any other measure. The salient point in the diagnosis of ischochymia was the presence of food in the stomach from a meal taken the previous day. The question then arose whether we had to deal with weakness of the muscularis or with stenosis of the pylorus. The symptoms related to dilatation, thickening of the pyloris, arrested peristalsis, and fermentation products. But the diagnosis ought, if possible, to be made before the occurrence of dilatation. When there was tumor and ischochymia had existed two years, one could make the diagnosis of benign stenosis. In his conclusions Dr. Einhorn pointed out that operative measures were usually indicated in both malignant and benign stenosis of the pylorus leading to ischochymia, the operation lying between excision, gastro-enterostomy, and plastic procedures, according to the extent of the disease, etc.

Fat-necrosis of the Pancreas.—Dr. H. U. Williams, of Buffalo, stated that fat-necrosis appeared in the fat on the surface of the pancreas and vicinity; similar nodules might be present in the fat of the peritoneum at points more remote, denominated disseminated or multiple fat-necrosis. Peritonitis was not usually present. The author had studied the pancreas in eighty dead subjects, and had found fat-necrosis in only two. He had also examined the pancreas of one hundred hogs, and found fat-necrosis in the interlobular fat in two. He had also met with what appeared to be the same change in the adipose tissue of the cat, but not near the pancreas. In some instances the fat-nodules had been found sterile. The bacillus coli communis was oftenest present.

Dr. Blaisbrook, of Washington, had examined the pancreas post-mortem in one hundred cases for fat-necrosis, and had found it in none. The only disease which he had found was carcinoma, and in one or two of these the gross appearance was that of fat-necrosis, but the microscope showed cancer.

Abdominal Effusions and Growths.—Dr. James Tyson, of Philadelphia, related a recent clinical experience which seemed to him of sufficient interest to bring to the attention of the section. A few months ago there was a woman in his wards at the University Hospital with ascites and some physical signs of that condition, notably succussion-tremor. She had, however, very marked tympany in the flanks, so marked that it led his house physician strongly to doubt the presence of fluid; but his diagnosis of fluid was confirmed by drawing off several pints. The symptom had been found, but in less degree, in a number of cases of ascites in the hospital since then, and his colleague, Dr. Penrose, had met with it from time to time. Leube had mentioned that the large intestine, which went as far forward as the midaxillary line and was shut off by the peritoneum, might give tympany under such circumstances.

Drs. Bayliss, Rochester, and Allen stated that they had recently met with cases in which this tympany had caused some trouble in diagnosis.

The Treatment of Cancer by Zinc-Mercuric Cataphoresis.—Dr. G. B. Massey, of Philadelphia, recommends metallic electrodes with high milli-ampère, up to 1000 or more, both electrodes being applied within the cancerous area in a manner presumed to cause diffusion of the metal into and throughout the cancerous tissue by cataphoresis. The metal thus diffused was supposed to be oxychloride of mercury, and it was believed to reach the cancerous or sarcomatous elements which had become disseminated into the surrounding healthy structures. His review of 8 total cases showed 2 cases cured, 2 apparently cured, 2 benefited, and 2 failures to permanently arrest the disease.

Case of Primary Renal Tuberculosis.—Dr. J. D. Steele, of Philadelphia, read the history of a case of presumable primary tuberculosis of one kidney, and called attention to the doubt which had been expressed by some authorities as to the occurrence of primary tuberculosis of the kidney. First, one kidney became diseased, and in about half of the cases the other

became involved before death. The pelvis of the kidney usually escaped until late, and the ureter was seldom implicated. More frequently other organs were also the seat of tuberculosis.

The Treatment of Epilepsy.—Dr. Matthew Woods, of Philadelphia, said that he had obtained better results from Niemeyer's treatment of epilepsy than from any other. The many varieties into which epilepsy had been divided was simply a multiplication of terms, and threw no light on the causation of the disease. He dwelt upon the surgical treatment—craniectomy, circumcision, etc.—because sometimes it was an important adjunct to drug treatment, and because he wished to show that too much importance had been attributed to the brain as the seat of epilepsy, and pressure on the brain as its cause. The seat of epilepsy could be anywhere, and any treatment not considering the starting-point must fail. One case he had cured by operating for epispadias, which had existed prior to the development of epileptic attacks. One woman burnt her hand, whereupon her epilepsy disappeared. The chief drug used by the author was bromide of potassium in gradually increasing doses taken in a large quantity of water—10 to 60 grains from one to four times a day, the treatment to be continued at least a year after cessation of the convulsions. In his summary he repeated that resort should be had occasionally to surgery, to relieve constriction of the prepuce, lacerated cervix, suspicious cicatrices; constipation should not be allowed to exist; digestion should be improved; a limited amount of animal food once a day; out-door exercise; bromide of potassium in the manner stated.—*New York Medical Record*, July 10, 1897.

The Philadelphia County Medical Society.

Some of the Common Causes of Mortality in Abdominal Surgery.—Dr. Joseph Price, of Philadelphia, stated that the morale of the patient has always much to do with the successful termination in all cases of surgical interference. It is very essential that the patient should be bright, cheerful, and hopeful. The patient's trouble should always be presented to her with great frankness and tact, in the simplest and most intelligible forms of expression. There should be no deception, no use of words exciting unnecessary alarm. There are certain offensive expressions that exercise a very vicious influence over the patient, such as: "You have a tumor; it will have to be cut out," "You will have to be opened," "Madam, you will have to go under the knife." Inspiring and sustaining a healthy and hopeful morale is a duty with both nurse and surgeon. So-called shock is, in a majority of cases, the result of, or is caused by, hæmorrhage. Fatal shock may be caused by the enucleation of a densely adherent tumor over the large ganglions of the sympathetic nervous system. The tendency to this can be noticed in a more or less marked degree while the operation is in progress, by failure of pulse, sighing, irregular respirations and the appearance of the patient, which is that of impending death. There is no question but that many of the cases put back to bed after operation, in a

moderately good condition, gradually sink and die in from twelve to sixteen hours from hæmorrhage, and not from so-called surgical shock. Shock is less frequent than formerly. It is avoided through our less barbarous methods of treatment. When it occurs, it is largely due to prolonged operations, prolonged anæsthesia, the violence of operations about vital parts, excessive use of ligatures and sutures. Occasionally we read reports of cases requiring forty or fifty ligatures to control hæmorrhage. The same operation in the hands of some other operator would probably have required but one. The anæsthesia and the operation are prolonged in the application of ligatures. Excessive hard tying causes great pain and adds to the shock. A hot irrigation toilet, when filth and *débris* exist, speedily cleans and favors reaction. The hot water is taken into and stimulates the circulation. Rapid operation is an important factor. Tolerant as may be the peritoneum, there is a limit to the impunity with which it may be exposed without risk. Chill adds to shock, and an unclean atmosphere to danger of infection and septic peritonitis.

The chances of infection and hernia are less with a small incision. The length of the incision must be regulated by the size and the character of the growth. In cases of the removal of hard, irreducible growths, the incisions are necessarily large. Our mortality is increased by not taking into consideration other organs than the diseased one, or the special trouble for which we operate. There may be diseased lungs, heart, or kidneys, the history of some inherited trouble, and other important considerations. It is needless to name those cases in which the risk is greatest, the mortality high. One of a group calls attention to the facts associated with others. We know that puerperal suppurative peritonitis commonly results fatally, especially if more is attempted than irrigation and drainage. Extirpation of the so-called septic uterus is uniformly fatal.

Curettage practiced after abortions and fancied abortions is commonly followed by violent septic peritonitis. Section, irrigation, and drainage will save life under these circumstances. General tuberculous peritonitis results in death unless surgically treated. Section, with the freeing of all adhesions and drainage or no drainage, results, in the majority of cases, in cure. Now, as always, I place special stress on irrigation and drainage, and urge the utmost refinement of every detail of the surgery. The most *unsurgical of all practices* is that of " reliance upon the ability of the peritoneum and general system to eliminate infectious matter " without the aid of drainage.

Such teaching is positively bad, whether carried on in our schools, private clinics, or from the chairs of our medical societies.

To patient, physician, and surgeon the nurse's office is one of preeminent importance. The practitioner, general surgeon, and those following special lines of surgery have learned from many disappointments and painful experiences the extent to which ignorant, careless, and inexperienced nursing have contributed to their mortality. The matter is one of equal interest to physician and surgeon. Societies, scientific and philanthropic, have greatly improved the personnel and education of our nurses.

There is much yet needed to elevate the standard of nursing to what it should be. Too many attempt the office with little elementary education, some without the least pretense to a common school education. There is needed culture combined with natural intelligence and aptitude. Nurses are sometimes socially uncongenial, unfortunately possessing those peculiarities of disposition that render them positively offensive to patients. Nurses should be impressed with the responsibility and dangers incident to their work, that theirs is the care of a life, in maternity cases of two lives, and that everything associated with the welfare of their patients should be studied with an intelligent interest. They must have a general inclination to forbearance and everlasting patience, must be wise and, before all, be cheerful. The doubt and fear that undoubtedly find place in the patient's mind prior to the operation, should find no confirmation in the manner of the attendant. The circumstance is no matter of gayety, yet there must be suggested to the patient a confidence and support in the persons of the physician and nurse. The progress of disease cannot but develop distress, mental and physical, in the surmounting of which lies the art and utility of the nurse. This art is not all a gift. So much strangeness and uncertainty surround life that the smallest bodily ills receive the most serious attention, and become often great afflictions through exaggerated thought. This state the nurse can aggravate through unguarded speech or conduct. It is her duty to have a solicitude independent of affection and ties of kinship. Our subjects are usually depressed in spirit by reason of their malady and the constant consideration of their condition, and large and difficult is the office of the nurse in removing this depression. Order and taste in the apartments, the pleasant appearance of the nurse, and her evenness of temper are, of course, well-understood elements in the sufferer's welfare. But, beyond all this, there must be a considerateness of speech on the attendant's part that shall serve without fail to divert attention from the ailment. Conversation should be limited, and the nurse's words carefully judged and modified for the character of her subject and growth of confidence. They should always be words of encouragement and hopeful stimulus. There should be little or no talk about disease or operations. The idiosyncrasies and the eccentricities of the patient should be noted, and the peculiar habits and the trend of thought studied and directed in healthy and hopeful channels. That the nurse should in morals be without even the suspicion of blemish; in speech, in entire person, clean, cannot be questioned. There is nothing so subtle in its infective, septic influence as moral filth, whether in physician or nurse. The nurse must be trained, thoroughly trained, and must have much of a surgeon's courage to deal with grave conditions without feeling or manifesting alarm. Repeatedly I have heard physicians say, after witnessing an operation: "Doctor, there is little chance for that woman," while the experienced attending nurse made no sign of any other confidence than that of a successful result. She should do everything cleanly, quickly, deftly, and not wear the patient out by her sleepy, slow, clumsy motions. Nursing must be something more and better than merely mechanical; it must have brains, educated hands,

the quick intelligence and spirit to appreciate and respond quickly, quietly, and intelligently to all the wants and necessities of the patient. The ranks of our nurses have been too largely recruited from that class who, on retiring to bed, throw their clothes on the floor and kick them under the bed.

There is no means of determining the percentage of mortality caused by dirt, uncleanliness, dirt somewhere about the person, the hands, the fingers, the clothes, instruments, the fine English cut or patriarchal beards of the operators, about the room and its appointments, the bed and its clothing. Antisepsis cannot correct the mischief; it in itself is not always harmless.

Too much has already been said in favor of the doctrine of antisepsis, and too little urging the practice of asepsis. The surgeon who has reduced and kept his mortality low, must acknowledge his debt to scrupulous care as to aseptic conditions. These are obtainable conditions. We repeatedly have coming into our hands cases in which the chances for and against recovery are very evenly balanced, and but little dirt or that with septic taint will turn the balance against us. In abdominal operations the surgeon should commence clean, wash out clean, and drain. The drainage-tube will keep the general cavity of the peritoneum free from all septic and abnormal contents and decomposing ooze. We know that for those extraneous conditions producing septic infection the surgeon and the nurse are largely responsible. We further know, when septic infection is carried into the peritoneal cavity or arises from some internal cause, that, unless it is promptly and thoroughly dealt with, the patient dies. We know that patients die when we depart from certain well-settled rules.—*Philadelphia Polyclinic*, June 19, 1897.

GREAT BRITAIN.

Edinburgh Obstetrical Society.

Puerperal Fever.—Dr. F. W. N. Haultain read a paper on the culture, diagnosis, and serum treatment of puerperal fever. The following illustrative cases were related: 1. Primipara, confined October 28, 1896; prolonged labor; low forceps. First ten days of puerperium were normal, but strength was regained slowly. On rising on the twelfth day the patient fainted, and had to return to bed for a week. Temperature remained below 100° F. (37.7° C.); pulse, 95 to 165. No pain; no sign of local mischief. On the twenty-sixth day severe pain and swelling in the right thigh, with temperature at 101° F. (38.2° C.), and pulse 110, which all passed away. On the thirtieth day intense pain in the left thigh and calf, swelling of limb, vomiting, fainting; temperature 102° F. (38.8° C.), pulse, 120; somewhat fetid discharge. A culture was taken from the interior of the cervical canal, and from blood drawn from the finger-tip. The uterine cavity was washed out with corrosive-sublimate solution, 1 in 4000. The agar tube showed next

day a typical culture of the Lœffler bacillus, and 10 cubic centimetres (10 minims) of antidiphtheric serum were injected. In the evening the temperature had fallen from 103.8° F. (39.8° C.) to 99.6° F. (37.5° C.), and the pulse from 130 to 95. On the fourth day from the first injection, as the temperature was again slowly rising, 10 cubic centimetres (10 minims) were injected on two successive days, after which all symptoms disappeared and the patient made an uninterrupted recovery. No evidence of contagion, direct, indirect, or remote, could be found, but the sanitary condition of the house was imperfect. 2. Primipara, normal confinement on 4th of March; forty-eight hours later rigor, followed by marked feverish symptoms. Temperature, 103.6° F. (39.6° C.); pulse, 120. Uterine douching was at once carried out and continued. March 8th, abdomen distended and painful, erythematous patches on legs, marked septic look. Temperature, 101.8° F. (38.8° C.); pulse, 140. Agar culture from cervix, which next day showed a growth of streptococcus and bacillus coli. Ten cubic centimetres (10 minims) of antistreptococcic serum (made by the British Institute of Preventive Medicine) were injected with a negative result. Next day 10 cubic centimetres (10 minims) more, and a day later 30 cubic centimetres (30 minims), with no good effect. Persistent diarrhœa set in, left knee-joint became swollen, pulmonary complications supervened, right parotitis, and exophthalmos followed in succession. A culture taken from the blood twenty hours before death gave a pure growth of bacillus coli. There was just a week between the onset of symptoms and the fatal issue. The patient was confined in a room immediately above a stable. 3. Primipara, normal confinement attended by a neighbor. On third day a rigor, and fever on the four following days, pain in the abdomen, delirium at times. On the eighth day, temperature, 103° F. (39.4° C.); pulse, 124; abdomen distended and painful; anxious expression; rapid breathing; uterus enlarged and tender; discharge offensive. Cover-glass specimens of the discharge showed many streptococci. On the ninth day 10 cubic centimetres (10 minims) of antistreptococcic serum were injected, uterus washed out with a 1-in-40 carbolic-acid solution, and packed with gauze soaked in the antitoxin. The temperature fell a degree. Next day 10 cubic centimetres (10 minims) again injected, followed in the evening by a further fall of a degree and a half in temperature. A cover-glass preparation still showed many streptococci, and the uterine washing was continued for two days. The condition then became favorable and continued so. These three cases showed, then, three distinct varieties of infection, the first an intra-uterine diphtheria, probably localized to the placental site, giving rise to a dangerous state without external evidence of its true character or evidence deducible from ordinary clinical signs. The second case was a mixed infection, showed the virulence of the bacillus coli communis and the absolute inefficacy of the antistreptococcic serum in those circumstances as had already been done by Chantemesse, Bosc, and Marmorek. The third case was of less value, since it was probably a simple toxin poisoning or sapræmia, which, as a rule, yields to antiseptic intra-uterine douching. In this case it had to be noted that improvement only set in after the douching was combined with the serum

treatment. The culture method was the most effective diagnostic yet advanced. Even the microscope gave no idea of the vitality or virulence of the organism. In Case 3, for example, streptococci were found in the discharge after the disappearance of the symptoms. Probably they were then either dead or so crippled as to be innocuous. It was to be hoped that the close observation of a number of cases would lead to the association of certain clinical symptoms with each variety of infection. Diarrhœa and erythematous patches seemed more or less characteristic of infection with bacillus coli communis. From a prognostic point of view the culture method was invaluable, because the prognosis varied greatly, according to the organisms present. Thus Marmorek has shown that, in 15 cases of puerperal fever in which the serum method was employed, 7 were due to pure streptococcic infection, and these all recovered; 5 were due to a mixed infection of streptococcus and staphylococcus, and of these 2 died; 3 cases were due to a mixed infection of streptococcus and bacillus coli communis, and all died. It was thus evident that in cases of mixed infection the prognosis was much graver, particularly so when the bacillus coli communis was present. Charpentier recorded 16 cases of streptococcic infection, with 7 deaths,—a vastly different result from Marmorek's; yet the prognosis was distinctly more favorable when the case was one of simple streptococcic infection. The prognosis in pure diphtheritic conditions seemed encouraging; saprophytic organisms appeared to owe their virulence to association with other organisms. Haphazard injection of antistreptococcic serum in all cases of puerperal fever was mere empiricism, and could give no valid deductions. Anxious symptoms sometimes resulted from the mere injections. All other methods should be conjointly used with the serum treatment, antiseptic douching, curetting, packing the uterus with antiseptic gauze, etc. Packing with gause soaked in antitoxin seemed worthy of more extended trial, since the serum was said to have a bactericidal as well as an antitoxic action. The first indication of beneficial effects from serum injection was the marked fall of the pulse-rate, the temperature falling later. Dr. Haultain concluded by urging every possible preventive measure against septic infection, and said that Godson's recent statistics showed that it could be avoided. He urged douching after all labors, once for all, with 1-in-40 carbolic-acid solution, which, acting but for one minute on streptococci and staphylococci, has been shown, by the experiments of Geppert, Behring, and Crookshank, to be sufficient to destroy them, and a weaker solution to have a similar effect on sporeless bacilli such as the bacillus coli communis. Corrosive sublimate (1 in 1000) failed after an hour's immersion to destroy the vitality of similar cocci.—*British Medical Journal*, July 3, 1897.

Clinical Notes and Therapeutic Suggestions.

The Development of Disease of the Appendix.—Robert Abbe concludes that the development of the diseased appendix may be said to pass usually through the following stages: 1. A catarrhal inflammation of the lining mucous membrane. 2. Irregular narrowing of the calibre, with hypertrophy of the mucous and muscular coats. 3. Strictures. 4. Imprisoned food, desquamated epithelium, and pus, forming concretions. 5. Obstructions at the stricture, distension, perforation, abscess. This will, he believes, be found to include the great majority of cases, but does not exclude appreciation of the rarer ones resulting from simple flexion of the organ or those resulting from internal ulceration.—*Medical Record*, July 10, 1897.

Appendicitis Complicating Pregnancy.—Abrahams recommends early operation on all but the very mildest cases. 1. Operate within twelve hours in acute perforative cases. 2. Take the pulse as a guide. A rapid pulse (116 to 120) is a strong indication for operation. 3. If in doubt, operate. 4. Operate if, after a sudden lull in symptoms, recurrence manifests itself. 5. In all recurrent attacks during pregnancy, even if mild, operation should be performed, especially when it takes place in the early months of gestation, as laparotomy is now easy and removes the possibility of a future attack in the later months, when the procedure is more difficult. —*American Journal of Obstetrics*, February, 1897.

Malarial Oculomotor Paralysis.—Kljatschkin could find but twenty-five cases of periodically recurring paralysis of the third nerve in the literature and he reports a personal case. Improvement was observed after counter-irritation and administration of large doses of quinine. Recovery was perfect, but within a few weeks there was a return of the paralysis of the left lid, which was again overcome by quinine. A third attack occurred and was also followed by recovery.—*Neurologisches Centralblatt*, No. 5, 1897.

Alopecia.—Leslie Roberts argues that alopecia is a sebaceous disease in which, as in seborrhœa, the increased fatty metamorphosis and consequent fat-stream is accompanied by a diminished, and finally arrested, keratin metamorphosis and hair formation. Possibly this hypertrophy of the sebaceous gland is brought about by the agency of a special organism which is invariably present in the fat-stream, and that the arrested hair formation, although connected with the fatty flux, is produced by a mechanism not yet determined.—*British Journal of Dermatology*, June, 1897.

General Paralysis.—August Hoch publishes a report of two cases observed by him in sisters, commencing at the age of 10 and 15, respectively, the youngest of seven children. Attention was attracted to one sister by an inclination to laziness at the age of 10; about a year later, however, marked motor symptoms were observed, after which the disease was progressive. Impairment of the intellect was noticed in the other sister at the age of 15. Syphilis in the father was probable. Microscopical examination of the nervous system of the first case showed thickening and infiltration of the cerebral pia. The cerebral cortex presented a reticulated appearance. There was enlargement of the pericellular and perivascular spaces, increase in the number of nuclei throughout the tissue, and great infiltration of the adventitial spaces with lymphoid cells. The nerve-fibres were diminished. Changes were found in the thalamus and cerebellum similar to those of the cerebral cortex. Some of the cells of Purkinje were notably altered. Degenerated fibres were found in the columns of Gowers, and in the pyramidal tracts, and in the latter they could be traced into the pons, but not into the cerebral peduncles. Some of the ganglion-cells of the anterior horns, especially in the thoracic region, were much altered. Some degeneration was also noticed in the cells of the nuclei in the medulla oblongata and pons Varolii. Infiltration about the vessels was also found in the pons. The neuroglia of the gray matter of the cervical and upper thoracic cord was proliferated. The degeneration of the pyramidal tracts, though not observed above the pons, is supposed to have been the result of destruction of cortical cells, and the limitation of this process to the peripheral portions of these tracts is explained by the well-known theory that the distal end of the neuron is first affected in slow degeneration.—*Journal of Nervous and Mental Disease*, February, 1897.

Antipyrin Poisoning.—Eisenmann reports an interesting case, showing that antipyrin may quite unexpectedly prove poisonous in a small dose (7½ grains, in this instance), in a person who has shown no special idiosyncrasy toward it, after taking the drug on many previous occasions.—*Therap. Monatsh.*, April, 1897.

Gall-stones.—A. H. Ferguson states that the diagnosis of occlusion to the ductus choledochus is not difficult, in the majority of cases, the chief clinical features being: 1. The history of cholelithiasis. 2. Pain—(*a*) referred; (*b*) local, over the common duct. 3. Tenderness elicited by finger-tip pressure is not over the fundus of the gall-bladder unless it, too, contains stones or is inflamed. 4. Jaundice is the sign of an obstructed common duct; chronic exacerbating jaundice is more characteristic of obstruction by a gall-stone loose in the duct than anything else. 5. Area of gall-bladder dullness lessened in chronic cases and increased in acute obstruction in a case that has had manifestations of cholelithiasis for a short time. The author believes that, in every case of biliary colic the gall-bladder enlarges during the first attacks. 6. Several slight attacks within a day or week, coupled with icterus, is strong evidence of choledochus-stone. 7. Vomiting may or may not be present; nausea usually is.

8. Emaciation is a late sign of this trouble. It was only well marked in one of his cases. 9. Chills and fever in 25 per cent. of cases (Courvoisier). Pyrexia was present in four of his cases.

For the treatment of stone in the common duct, whether impacted or loose, which cannot be extracted through the cystic duct and gall-bladder, choledocholithotomy is the ideal surgical procedure. Breaking up the stone with needles or forceps is: (*a*) Uncertain that complete work was done; the *débris* may not all escape with the bile and more or less injury (puncture or bruise) is done to the walls of the duct. (*b*) Less opportunity is afforded to test the permeability of the duct, for it may be obstructed lower down.

Cutting into the duct longitudinally does not appear to predispose to complications or sequelæ.

In the majority of gall-stone cases causing obstruction of the common duct there are also stones in the cystic duct and gall-bladder; then cholecystotomy should be the operation of choice, because (*a*) it is usually easy to remove stones from the common duct through the dilated cystic duct; (*b*) the safety of the patient from death by cholæmia is insured, and the patient may not stand any more; and (*c*) should a stone be left in the common duct it can be treated afterward by bougieing the ducts or by choledocholithotomy, in preference to cholecystenterostomy.

The author recommends the following technique: 1. Oblique incision when the gall-bladder is contracted. 2. Adhesions should be carefully separated in the line of search for stones and nowhere else. The fundus of the gall-bladder being found, it is followed on the under surface of this organ to the cystic and common ducts. The adhesions are cautiously cleared away along this route, but any that may be shutting off the general peritoneal cavity should be left alone. When the foramen of Winslow is reached the gastrohepatic omentum is palpated, for in it courses the ductus choledochus. If the adhesions are dealt with as above described the subsequent drainage is easier and more efficient. 3. Incision of the duct is done longitudinally over the anterior surface of the stone. 4. Test the patency of duct by probe or water-test. 5. Suturing the duct is not at all essential for success, and may be harmful by (*a*) prolonging the operation and (*b*) by injuring the wall of a pathological duct that does not hold sutures. 6. Drainage, both tube and gauze, should be used.—*Tri-State Medical Journal and Practitioner*, April, 1897.

Chloroform Anæsthesia.—H. C. Wood and W. S. Carter published a study of the relations between the function of respiration and that of circulation, with a view of estimating how far a mere lowering in the activity of one function is immediately deleterious to the other. Conclusions:—

1. Lowered arterial pressure has a comparatively feeble effect upon the respiration, but, when the pressure falls sufficiently, respiratory depression does occur. 2. Even excessive lowering of blood-pressure primarily stimulates the vasomotor centre, the sensibility of the centre being evidently necessary to the automatic regulation of the circulation. 3. The circula-

tion recovers itself more slowly after profound etherization than after a like chloroform narcosis. 4. It is possible for ether as well as chloroform to produce death some hours after the cessation of its administration, at a time when the cerebrum has long freed itself from distinct evidences of the narcotic, so that consciousness and intellectual action have been restored.

In applying these conclusions to the subject of practical anæsthesia it is evident that the depression of the circulation produced by chloroform has effect upon the respiratory centres only when the pressure has fallen very low, and, while it may be a factor in the production of respiratory failure during chloroformization, the failure must be chiefly due to the direct influence exercised by the drug upon the respiratory centres.

Clinical experience shows that nausea and general depression are more pronounced after the use of ether than after the use of chloroform,—a difference which is strongly insisted upon by the advocates of chloroform as an important agent in favor of that anæsthetic. The authors state their research confirms clinical observation, and experimentally shows that the depression of the circulation produced by ether is more permanent than that caused by chloroform, the reason probably being the large amount of ether which is necessary to produce profound narcosis, with lowering of the arterial pressure,—an amount so large that it can neither be burned up in the system nor yet eliminated in the time which would be necessary for the much smaller amount of chloroform to be gotten rid of after chloroformization.—*Journal of Experimental Medicine*, May, 1897.

Hæmorrhoids.—Robert T. Morris in an interesting article gives the comparative value of methods utilized in the treatment of this disease:—

The Whitehead operation, or the so-called American operation, is preferable, because it removes the special rectal sense apparatus. The method of injection of the pile with carbolic acid or astringents is very dangerous, because veins remain wide open to carry septic emboli to the liver or heart.

Crushing methods expose the patient to the dangers of septic embolism and septic infiltration. The clamp-and-cautery method is successful in the hands of a few experts and avoids many dangers, but the wounds often heal very tardily. Simple dilatation of the sphincter muscles is a palliative procedure only.

The best two methods involving the least danger are the method of ligation and excision of the pile-tumors or excision of piles and suture of the incisions. In selected cases the latter is the author's favorite.—*Mathews's Quarterly*, April, 1897.

Insanity.—Magnan states that alcoholism contributed to the population of the asylums of France, in 1894, 775 patients—624 males and 151 females. The forms in the males comprised 282 cases of alcoholic delirium, 332 of chronic alcoholism, and 10 of absinthism. The females included 90 cases of alcoholic delirium, 60 of chronic alcoholism, and 1 of absinthism. Be-

sides these, if we take account of the cases in which excesses in drink caused the entry into the asylum of patients who, without this cause, would have been able to get on outside, we find further 166 males and 63 females. The two groups—simple alcoholic cases and the insane with alcoholic causation, a total of 1004 patients—give a percentage of 38.42 of the male and 12.82 of the female admissions. Thus, on the average, one-third of the insanity of the Department of the Seine is due to alcohol.—*Progrès Médical*, May 23, 1897.

Lumbar Puncture.—Babcock gives indications for this operation, and reports nineteen cases in which puncture was done. Twelve were general paralytics, two simple melancholiacs with pressure symptoms (intense headache, stupor, photophobia), and the remaining five included one case of each of the following maladies,—locomotor ataxia, stuporous melancholia, organic dementia, status epilepticus, and acute delirium. A careful study of the results obtained brings out the following conclusions: 1. Lumbar puncture affords temporary relief from pressure symptoms in over 50 per cent. of cases of paresis submitted to the operation. 2. The most beneficial effects are manifest over motor inco-ordination,—*i.e.*, ataxia, tremors, etc. 3. Analysis of the fluid obtained in paresis shows that it contains an inflammatory product (albumin) throughout all stages. 4. It may be of benefit in locomotor ataxia, status epilepticus, or organic cerebral disease, and deserves further trial in these cases. 5. It presents excellent diagnostic possibilities, particularly in meningeal inflammations. 6. It does not sufficiently benefit melancholia with pressure symptoms to warrant its use in this disease. 7. Reaccumulation usually occurs within from three to ten weeks, when a second or even a third puncture is indicated if patient's condition admit.—*International Medical Magazine*, May, 1897.

Obesity.—Grawitz, Gerhardt, Hennig, and other authors state that the active principle of the thyroid, a trituration of which with sugar of milk was introduced under the name of iodothyrin by Baumann, enables the physician to avail himself of all the benefits of the thyroid treatment in obesity without the drawback of other thyroid products. Experiments made with iodothyrin have demonstrated that even in cases where no change was made in the diet there was a rapid and marked reduction in weight. This was unaccompanied by unpleasant or toxic effects of any kind, so that the new remedy may be considered as a safe and reliable antifat, and an important acquisition to the treatment of obesity.—*Health*, May 1, 1897.

Chlorosis.—Simon, in a study of thirty-one cases, states that in the great majority of cases chlorosis is essentially a disease of malnutrition, the result very frequently of abnormal feeding in early childhood. As a rule, there is a subnormal elimination of nitrogen, referable to the ingestion of an insufficient supply of proteid food and especially of red meats. An anatomical basis of chlorosis has not been satisfactorily determined. A

perversion of the appetite—excessive consumption of starches and sugars —is a common symptom of chlorosis. Chlorosis is far more common than is generally supposed, and occurs in both sexes and at almost all ages. The diagnosis should be based altogether upon an examination of the blood.

The author argues that iron is not a specific and attention should primarily be directed to the diet. In cases in which iron fails satisfactory results may be obtained without medication from a suitable diet, in which animal proteids, bone-marrow, and dark beer are the principal factors. The beneficial effects of bone-marrow are not due to the amount of iron which it contains.—*American Journal of the Medical Sciences*, April, 1897.

Pertussis.—Fröhlich states that leucocytosis usually exists in these cases and that it is often quite marked. He especially observed it in cases examined in the third and fourth week, at the period when the paroxysms were most severe. The patients examined before and after this period showing a less leucocytosis; the augmentation of the white blood-corpuscles must have occurred with the increasing intensity of the attacks. Decrease of white corpuscles caused renewed reduction of the intensity of the paroxysms. Patients suffering from disease which of themselves gave rise to a leucocytosis were excluded from this series.—*Jahrbuch für Kinderheilkunde*, vol. xliv, No. 1, p. 53.

Meningitis.—J. W. Carr recognizes a distinct form of meningitis, occurring almost exclusively in infants, which has not at present received adequate recognition. Description of this disease is based upon eleven cases observed at the Victoria Hospital for Children (Chelsea). All the cases occurred in previously-healthy infants under a year old.

The onset is gradual in some, sudden in others; but, in all, the most constant and characteristic symptoms are severe vomiting, extreme head-retraction, and stupor, passing into coma, of remarkably long duration,—generally several weeks,—the excessive head-retraction persisting to the last.

The cases reported all terminated fatally, none in less than five weeks, while some children lived for three months or even longer. At the autopsies (ten in number) inflammation of the pia and arachnoid was found over a very definite area at the basis of the brain, hydrocephalus in all the cases, and, in some, closure of the openings between the fourth ventricle and the subarachnoid space. In no instance was any sign of tubercular disease discovered, either in the cranial cavity or elsewhere.—*Medical Week*, April 16, 1897.

Artificial Respiration.—Van Beverhout Thompson recommends New's method, the technique of which is as follows: Grasp the still infant by the nape of the neck with the forefinger and thumb of the left hand, with the palm of the hand resting beneath the shoulders and back and the fingers in the axilla; then with the right hand grasp the legs at the knees, the forefinger placed between the two, the thumb holding one leg and the three remaining

fingers the other leg and thigh. This insures perfect control of the infant, and it is almost impossible for it, however heavy, to slip out of your grasp.

To make an inspiration, let the head fall backward, thus stretching the larynx and trachea, which opens the epiglottis; at the same time the mouth opens; bend the body and back far backward, and by these movements the air will be drawn into the air-passages.

To produce expiration, double the child up, letting the head fall forward upon the chest; then bring the legs well up, so that the toes touch the forehead, compressing the thoracic walls. These movements force the air out of the air-passages.

These motions of opening out and shutting up the infant, so to speak, are kept up until respiration is fully established or until it is considered useless to continue them. In some cases artificial respiration has thus been kept up for one hour before respiration was fully established, and after there was no circulation in the umbilical cord, which was tied and cut.—*Hot Springs Medical Journal*, June, 1897.

The Biological Basis of Menstruation.—In an editorial the *New York Medical Record* reviews this subject, of which little is really known and the literature upon which is very scant. Up to ten or fifteen years ago the universally accepted belief was that ovulation was the cause of menstruation, but a revolution in these views has taken place. Dr. de Sinety, in 1881, cast doubt on the old theory, and since that time many have agreed with him, although now there is by no means unanimity of opinion among students on the subject. Various theories have been introduced as to the causation of menstruation, but as yet no definite conclusions have been reached. In a paper read before the Montreal Medico Chirurgical Society, Dr. Webster, of Montreal, puts forward the contradictory theories of different authorities, pointing out where he thinks they are wrong, and giving the result of his own observations. To Johnstone, in America, and to Heape, in England, much of the credit is due of demonstrating that ovulation is not the cause of menstruation. In this connection Heape examined the pelves of forty-two monkeys (*Semnopithecus entellus*) during their menstrual periods, and found evidences of ovulation being in progress in only two cases. According to Lawson Tait, removal of the Fallopian tubes, the ovaries being left *in situ*, is followed in 95 per cent. of cases by cessation of menstruation. Bland Sutton says, in direct contradiction of this statement, that "the Fallopian tubes exercise no influence on menstruation, and in order to produce artificial amenorrhœa both ovaries must be completely removed." In 1887 Johnstone disproved the long-held idea that each menstruation results in the shedding of the entire endometrium, and defines the process of menstruation as a shedding of the superficial layers of the endometrium, and, as a kindred process to the molt in birds and the shedding of the horns and hair in the deer tribe. He has also advanced the theory, in which he is supported by Tait, that the menstrual act is a special function related to a distinct nervous mechanism. They think

that possibly a special nerve-trunk, running in the upper part of the broad ligament, may convey the regulating currents. Webster is inclined to regard the subject from a body metabolism and biological point of view, and thinks that the theory advanced by Geddes and Thomson in their "Evolution of Sex" is worthy of great consideration. This theory holds that the menstrual process is related to the balancing of anabolism and catabolism in the female. If the female sex be preponderatingly anabolic, menstruation is one of the functions of anabolism in the female, and is a means of getting rid of the anabolic surplus. Looked at from a biological stand-point, the argument is as follows: Throughout the animal kingdom the distinctive and predominant characteristic of the male sex is catabolism and of the female anabolism. The same distinction is also found in the plant-world, and these lines of inquiry are suggested thereby: 1. A study of sexual characteristics in the fully-developed state and in the history of the individual. 2. An investigation into the condition of the lowest forms of animal and plant-life in which sex has its beginning. 3. Observation of normal and pathological changes in the reproductive apparatus. 4. Experimental inquiry into the nature of the factors which determine sex.

The editorial writer considers that there is much opportunity for original research in studying this question from a biological stand-point, and expresses the opinion that it is possible that the solution of the difficult problem may be found by attacking the question in this manner.—*New York Medical Record*, July 10, 1897.

Diabetes Mellitus.—R. T. Williamson expressed doubt that all the varied pancreatic changes which have been recorded in diabetes are the *result* of the disease, and that diabetes should be able to produce such a number of varied affections of the pancreas,—as cancer, cirrhosis, atrophy, abscess, etc. Judging from the frequency of pancreatic lesions in diabetes and from the fact that often the pancreas presents marked changes, while in the rest of the organs none of importance are detected, it is improbable that the lesions are accidental. Again, the remarkable results produced by extirpation of the pancreas make it appear very probable that, in certain cases, diabetes is directly due to pancreatic disease.

Records of 23 cases, in which the pancreas appeared normal in 8, both microscopically and macroscopically; while in 4 the only change observed was atrophy, which was scarcely out of proportion to the general wasting of the body. Hence, in 12 out of 23 cases diabetes was due to some other cause than pancreatic disease; or, the pancreatic affection must have been one giving rise to changes which cannot be detected microscopically or macroscopically,—*i.e.*, a functional disease. It may be pointed out that not only the pancreas, but also the brain, liver, and other organs, are very often normal or present only changes which are undoubtedly of a secondary nature. On the other hand, the importance of the pancreas is evident when we bear in mind the results of experiments on animals, which show that *total* removal of the pancreas invariably produces diabetes, and that a small portion of pancreatic tissue grafted under the skin of the abdominal wall is

sufficient to prevent diabetes, when the whole of the gland is removed from within the abdomen. Furthermore, considering the number of cases recorded in which marked pathological changes—often almost complete destruction of the gland—have been found in the pancreas at the post mortem examination of diabetic patients, it appears exceedingly probable that the disease has been due to a pancreatic lesion when extensive changes are found in the gland.—*London Medical Chronicle*, May, 1897.

Post-partum Hæmorrhage.—Kumpf recommends rapidly-repeated mechanical stimulus to produce uterine contraction, when the bleeding is due to uterine atony. Standing facing the patient on the right side of the couch, with the right arm held stiff, the fingers are placed on the abdomen midway between the umbilicus and the pubis, and, by a succession of rapid impacts, the uterus is compressed against the spinal column. It is easy to deliver thirty or forty shocks per second in this manner, and the result is prolonged tetanus of the uterine muscle. When the uterus becomes fairly contracted the procedure is changed, and the operator, standing with his back to the patient and passing the fingers behind the uterus, compresses it now against the pubis, and thus delivers his shocks upon the posterior uterine wall. In this way powerful contractions lasting several minutes are elicited, and the procedure can be repeated, if necessary. The method is simple, harmless, rapid, and requires no instruments.—*Centralb. f. Gynäk.*, March 20, 1897.

Cirrhosis of the Liver.—Van Heukelom writes that cirrhotic conditions in the liver are not dependent upon parenchymatous (cellular degeneration and necrosis), but the latter occur sometimes primarily, sometimes secondarily, in the course of the cirrhosis. Alcohol and phosphorus are the direct factors in the production of cirrhosis, for, considering the large amount of alcohol consumed, cirrhosis is rare. The cause must be sought in bacteria and their products, and in many substances which undergo decomposition and fermentation in the intestinal tract. Disturbances in the alimentary canal exert their greatest influence on the liver, while Hanot has demonstrated that cirrhosis of the liver can occur after gastro-intestinal disease. Alcoholic beverages disturb the digestion, and the complex changes thus induced in the metabolism in the intestinal canal perhaps give rise to the cirrhosis in those who are predisposed to this condition.—*Beitrage zur path. Anat. u. zur allg. Path.*, vol. xx, No. 2, 1897.

Renal Tuberculosis.—Tilden Brown gives statistics from the pathological records of the Presbyterian Hospital, covering a period of three years and three months. Total number of autopsies, 567; total number showing tuberculous lesions anywhere, 68, or 12 per cent.; total number presenting tuberculous lesions of kidneys, 23. Thirty-four per cent. of tuberculous bodies showed infection of one or both kidneys. Of the bodies showing renal infection, 13 were males and 10 females.

Clinical observations place the subject of local tuberculous lesions in a much more favorable light than do those of necropsy records. Distinction

must be drawn between so-called clinical recovery and actual anatomical recovery.

The more important evidences of renal tuberculosis are: tumor, pallor, and emaciation; œdema of the feet and legs, reaction to tuberculin, albuminuria, pyrexia, hæmaturia, dysuria, polyuria, and other urinary derangements; night-sweats, moderate pyrexia, and microscopical detection of the bacilli.—*New York Medical Journal*, March 30, April 3 and 10, 1897.

Kelynack reaches the conclusions based upon the Manchester post-mortem records of "scrofulous" kidney: 1. Local tuberculosis of the kidney, in the form of the so-called "scrofulous" kidney, is met with in about $\frac{1}{2}$ per cent. of all cases submitted to pathological examination in a general hospital. 2. "Scrofulous" kidney is most frequently met with in men. 3. "Scrofulous" kidney is usually met with in adult life, the average age being about 34. 4. Both organs are generally involved; where only one there is no noticeable difference in the frequency of the side affected. 5. Considerable variety exists in the size, shape, weight, and general characters of the "scrofulous" kidney. 6. Tuberculous lesions elsewhere in the body are found in 90 per cent. of all fatal cases. The lungs present evidences of either latent or active tuberculosis in 70 per cent. The genital organs or urinary bladder are involved in 75 per cent. 7. A thorough examination of the whole body, and especially of the lungs and genito-urinary tracts for tubercular processes, should be made in every case of suspected "scrofulous" kidney, particularly if the advisability of surgical interference is under consideration.—*Medical Chronicle*, May, 1897.

Prostatic Hypertrophy.—This subject continues to attract considerable attention. At a meeting of the New York Academy Tilden Brown reported the case of a patient, aged 72, on whom he had operated twelve months previously. In August, 1895, he was admitted into hospital with an enlarged prostate and complete retention, and was treated by rest and catheterization for almost ten days without any benefit. Being still unable to pass a drop of urine, he was subjected to double ligation of each vas deferens without severing and without any resection. The functional improvement which gradually followed this operation was surprisingly gratifying, and it continued after he left the hospital. On the other hand, Bolton Bangs gave the details of four cases of resection of the vas deferens, in which the results were unsatisfactory.

Walker mentioned the case of a man, aged 67, who came into the hospital for an operation to relieve his enlarged prostate, and who was unable to pass any urine without the catheter. Excision of both vasa deferentia was done, about one-fourth of an inch removed from either side. Within about two days he began to pass some urine himself, and two weeks after operation was able to empty his bladder with the exception of three ounces of residual urine. The testicle had become much softer than it was before the operation. The prostate, which was hard, large, and tender, had become softer, and the catheter could be introduced with much less effort.

Two cases of ligation of the vas deferens were reported by KAMMERER. In one case, a man aged 65, the result was unsatisfactory, although the patient was observed for four months. The second case had acute retention, and was in a very bad condition. The next day after the operation he was able to pass his urine, and by the end of three weeks his prostate had decreased considerably in size.—*New York Academy of Medicine*, January 12, 1897.

Birkett, Hilton, and others having shown that atrophy of the testis is a sequence, in the human male, of rupture or section of the vas deferens, R. HARRISON states that we should take advantage of the fact and in this way induce prostatic atrophy without resorting to castration. After division of one vas or both vasa in the human species some change in the size or consistence of the testis, in the way of shrinking or softening, has generally been evident in the course of a few days. Following upon this, analogous alterations have been discovered by rectal examination as taking place in the prostate, corresponding, of course, to whether one vas or both vasa were diseased. In others the latter changes have been inferred more by the easier introduction of the catheter which followed, or by the lesser distance the instrument had to traverse the urethra before urine flowed than by recognizable structural alterations. The intervals between urinations become more rapidly prolonged. Further, the easier passage of instruments into the bladder, which has generally followed, has reduced liability to hæmorrhages and cystitis. Prostatic spasm has also been noted as ceasing. The author gives two illustrative cases.—*Lancet*, February 22, 1897.

Two cases bearing on the question as to whether the removal of one testis acts as a prophylactic against the hypertrophy of the corresponding prostatic lobe are reported by BRYSON. This author concludes that the removal or destruction of one testicle as much as ten years before the hypertrophy should begin cannot be relied upon to prevent hypertrophy taking place on the corresponding side.—*Journal of Cutaneous and Genito-Urinary Diseases*, March, 1897.

Diphtheria.—To differentiate the diphtheria bacillus from pseudo-organisms DE MARTINI gives the following distinguishing features: The true diphtheria bacilli do not grow in fluid antitoxic serum, nor do non-virulent pseudobacilli that render bouillon acid, while virulent organisms that render bouillon alkaline grow equally well in liquid antitoxic serum and normal serum. All forms grow excellently upon antitoxic serum that has been coagulated at 70°.—*Centralb. f. Bakt., Parasit., u. Infr.*, January 30, 1897.

Tuberculosis of the Tonsils in Children.—SCHLESINGER gives a report of an examination post-mortem of seventeen cases of tuberculosis. In thirteen cases of phthisis which were associated with slight caseous pneumonia and caseous peribronchitis, there were twelve with tonsillar tuberculosis. In four cases of old pulmonary tuberculosis with old caseous foci or with

intestinal or joint tuberculosis, the lungs being free, there were no tuberculous changes in the tonsil. As is the case, pulmonary phthisis is almost always accompanied by tonsillar tuberculosis, and, conversely, in tonsillar tuberculosis pulmonary tuberculosis is never wanting. In mild tuberculosis of the lung, or especially in cases of healed foci, the tonsils are free from tuberculous changes.—*Centr. f. Bakt., Parasitenkunde, u. Infectionskrankheiten*, January 9, 1897.

Cataract.—Baquis states that spontaneous absorption, whether slow or rapid, takes place only when certain changes occur in the epithelium of the lens-capsule by which an abnormal process of osmosis is established. Reference to analogous phenomena connected with disease of the renal and vascular endothelia, as well as to the opacities of the cornea, which may be brought about experimentally by merely scratching the endothelium lining of Descemet's membrane.—*Ann. di ottal.*, vol. xxvi, p. 2.

Dyspepsia due to Motor Insufficiency.—Rosenheim states that splashing under the umbilicus five hours after ingestion of fluid, visible peristaltic and antiperistaltic waves, and vomiting of long-retained food are aids in diagnosis. The latter is only assured, however, by the discovery that the stomach is not empty seven hours after a test-dinner or three hours after a test-breakfast, or even more positively after a night's fast. The motor weakness may occur suddenly in neurasthenic individuals and after errors in diet, when it usually disappears soon, with proper handling. But a sudden onset is apt to occur after injury, even when this does not directly affect the stomach, and is then due to a paralytic condition of the viscus, which may become permanent and resist treatment strongly. The gastric crises of tabes may cause motor weakness by overstrain in vomiting.

The treatment should be: 1. Dietetic,—a dry diet when the stomach cannot empty itself of moderate quantities of liquids, and when the patient cannot rest after meals. When these two conditions can be fulfilled fluid may be allowed in small quantities, frequently taken. 2. Local treatment is always indicated, in severe forms, to remove food-remnants and prevent fermentation; in less severe cases, for its tonic effect, and one should always use the douch of low temperature (22° to 25° C.) and containing one of the numerous stomachics. Massage, electricity, and particularly hydrotherapy are of use for their constitutional effects. When this treatment has no good results gastro-enterostomy is indicated.—*Berl. klin. Woch*, No. 11, 1897.

Malaria.—From the results of an investigation into the form of the parasite present in the blood during the different stages of tertian, quartan, and estivo-autumnal malarial fevers, Woldert concludes that whether the organisms present be modifications only or distinct varieties of a species, the three forms can be easily separated from one another by an examination of the blood. The effect of quinine in changing the type of fever, as from the quotidian—due to a double tertian infection—to the tertian, may be due to its lethal action upon one of the groups of organisms at the time of their segmentation.—*Medical News*, February 13, 1897.

Scarlatina.—Lemoine reports twenty-three statistical cases in which the eruption was exclusively limited to the face. The patients suffered from an angina, with fever and redness of the face. The fever fell, but the redness continued, and was shortly followed by a more or less abundant desquamation. A few of the cases afterward developed albuminuria, anasarca, and symptoms of uræmia. Probably a transition stage between the anginoid scarlatina and scarlatina with general eruption.—*Le Progrès Médical*, February 6, 1897.

Typhoid Fever.—Pfuhl describes the following simplification of the method of serum diagnosis: Mix a drop of blood with ten drops of water and then, adding a drop of this to a similar quantity of typhoid bouillon culture, to examine in the hanging drop, as by the ordinary technique. If it is not possible to make this dilution at once, the reaction is in no way influenced, ten drops of water mixed with one drop of dried blood acting quite as well, thus enabling the specimens to be carried a considerable distance before the test is made, or even to be sent by mail. It must not be overlooked, however, that the reaction occurs much more slowly if the blood is kept more than two days.—*Centralb. f. Bakt., Parasit., u. Infr.*, January 20, 1897.

Convulsions.—Von Bechterew reports the results of experiments by Suschtschinski and Wyrubow, proving that the convulsions caused by irritation of the pons are due not to irritation of the convulsion-centre, but to the transmission of the irritation to the cerebral hemisphere, and especially to the motor cortex. The movements so characteristic of epilepsy are not produced by irritation of the pons or other subcortical parts.—*Neurologisches Centralblatt*, No. 4, 1897.

Dyspepsia of Infancy.—Acute dyspepsia is most difficult to treat when it occurs in nurslings under the age of 3 months, before which time farinaceous food is badly borne, either leaving the intestine unchanged or increasing the dyspepsia. A gruel made of ground arrow-root, maize, or rice is, perhaps, less intolerable than other forms, but in many cases one is reduced to feeding the infant, for a day, at least, on thin veal-broth or egg-water (the white of one egg, with some milk sugar, to two pints of boiled water). If this diet is properly assimilated it may be continued for a couple of days, the child then being put on to a mixture of a pint of cows' milk with 2 pints of 5-per-cent. solution of milk-sugar. In some instances peptonized or albumose milk may be given with advantage.—*Pediatrics*, April 15, 1897.

Extroversion of Bladder.—Reginald Harrison reports the case of a boy, aged 15, the subject of extroversion of the bladder with epispadias and bifid pelvis, in whom the left kidney was removed by lumbar incision, the right ureter being brought out at the loin. The latter procedure was

accomplished by a small incision, as for lumbar colotomy, and, having secured the ureter where it crossed at the bifurcation of the common iliac artery, it was ligatured and cut across on the kidney side of the ligature, brought out at the wound in the loin, and secured by stitches. Urine at once began to trickle from it in its new position. After an illness, characterized by vomiting and irregular fever, the patient made a good recovery. —*British Medical Journal*, April 17, 1897.

Digitalis and Strychnia in Cardiac Affections.—R. H. Babcock, of Chicago, states that, whenever a diseased heart, which has hitherto performed its work satisfactorily, suddenly displays vagaries of action, it should not be taken unreservedly for a sign of failing compensation. Efforts should be made to discover the cause, since the correction of injurious habits, or the removal of reflex disturbances may set the heart to rights before serious damage ensues. Should the derangement of the cardiac action threaten to produce or actually cause dilatation, then, of course, digitalis and strychnine are indicated; but, so long as compensation is intact, digitalis and allied remedies should be withheld.—*The Medical Standard*, July, 1897.

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Improvement of Brain Function by Surgical Interference.—ERNEST LAPLACE, of Philadelphia, remarked that only a few years ago the surgeon scarcely dared to invade the sacred domain of the brain. Emboldened by the triumph of aseptic methods in dealing with the surgery of the peritoneal cavity, it followed that the same principles might possibly triumph in the surgery of the meninges and brain. To-day accurate results are reached in both, so that sepsis is practically eliminated, and dealings with the brain surgically will depend upon intrinsic factors, rather than extrinsic ones, for the achievement of practical results. This was the *sine qua non* without which all reports of results of operations would be indefinite and unfit to give an adequate idea of the value of a surgical procedure applied to the brain, to achieve or fail in achieving a stated result.

Taking it for granted, therefore, that asepsis has been maintained, and considering the subject purely from an intrinsic stand-point, the object of his communication was to develop, in a measure, the principle of improvement of brain function by a surgical operation. He insisted upon this manner of expressing the problem, because in the vast majority of instances pressure is the cause of this interference, and the relief or restoration of function will depend upon our ability to diminish or entirely remove the permanent or transitory compressing cause. Physiology teaches us the delicate arrangement of nerve-cells, their necessity for special function, and the intricate blood-vessel arrangement upon which they depend for proper nourishment. The author did not purpose to discuss or even to state the much-debated points in the minute anatomy of the texture of the brain, but rather to apply to the brain the same hypotheses as to its pathological

reactions as we have been led by experience to believe respecting other organs in the body.

The title of the paper, while embodying the whole subject of brain therapeutics finding application through surgery, includes, however, but (1) the general pathological conditions as diagnosed; (2) the application to the brain of the same principles of surgical therapeutics as would have been resorted to to fulfill similar indications in other portions of the body.

Two great symptoms point to trouble about the brain,—first, pain; second, interference of function. These two symptoms, though generally concomitant, need not necessarily accompany each other; but either one or the other or both are always present.

The true explanation is not only possible, but he would risk the statement that it could be traced to one of the four irritants that form the foundation of pathology,—a chemical, physical, biological, or mechanical irritation,—while interference with function is likewise referable to the same causes.

"Interference with function may be due to a permanent or to a transitory cause. Each of these may or may not be removable. When not removable, the cause, though partly attainable, is so disseminated that it involves too extended or parenchymatous a portion of the brain, or else it exists at such vital portions of the brain structure as to forbid the approach of the knife without fatally affecting the true source of life,—the origin of the pneumogastric and sympathetic nerves.

"Too much importance has always been placed on what has been called the purely functional disturbances of the brain, such as would correspond to the former idiopathic diseases elsewhere, now being reduced to a strange scarcity under the light of modern pathology. We should push to its utmost the application of the same principles to the delicate neuroglia and complex net-work of fibres which, when unimpaired, present brain function as a harmonious whole, and when disturbed, even in so little as the faulty crossing or touching of two fibres by any cause inherited or acquired, produces the same discord in the harmonious whole as the crossing of two telephone-wires produces to the intelligent ear at the central office.

"Our generation may not see such a delicate lesion as this demonstrated under the microscope, but we already see how gross lesions of the brain-centres distinctly affect certain portions of the body. Less is known of the purely ideo-motor centres and their disturbances by the same lesions, whether limited or disseminated. Still, proceeding upon the hypothesis that the brain-tissue, whether in the anterior, middle, or posterior areas, is governed by the same pathological reactions as the rest of the body, why not, when sanctioned by a diagnosis based upon pathology, proceed to the treatment on the same general lines? For the practical application of this principle our technic must necessarily be perfect. We must at first eliminate all failure which is due to faulty technic, and by that is meant death after operation from shock, hæmorrhage, or sepsis. This is pardonable in emergency cases, such as traumatisms and tardy cases of mastoid disease where infection exists before the operation to save life is resorted to. The

first requisite, therefore, is that no operator should undertake a brain operation who has not mastered the art of opening the skull, arresting hæmorrhage in the scalp, in the dura, and substance of the brain without exposing the patient to sepsis. This prerequisite may be styled by many as begging the question, but I must venture to state that this whole question can only begin to be discussed with justice when this point has been reached. While an account of the technic would lead me away from the subject, the one point upon which I will here lay special stress is *shock*.

"This strange condition following traumatisms, so marked when the brain is concerned, can only be measured by the trained touch of a skilled assistant, the operator himself being forbidden, for reasons of asepsis, from feeling the patient's pulse. Better cease an operation without having achieved what was attempted than expose the patient to death from shock. I consider *that* a part of a faulty technic pretty nearly as I would a subsequent infection of the wound. The rapid and wavering pulse is the index. Hypodermic injections of strychnia ($\frac{1}{60}$ grain) should be given from time to time to maintain the pulse at about 100 a minute. Hot-water bottles should be constantly kept about the patient during and after the operation. On being placed back in the bed the head should be put in a a very dependent position, while high enemata of warm water are freely administered. These procedures reduce the possibility of fatal shock to a minimum. If, however, after the administration of $\frac{1}{4}$ to $\frac{1}{2}$ grain of strychnia the pulse shows a tendency to rise, the operator should be warned and the operation closed.

"Perhaps the most frequent indications for interference in regard to the brain are after severe traumatism resulting in concussion or possibly contusion of the brain. We know that aside from the shock attending these cases the congestion of the brain which follows is the prime cause of the interference with function which results in unconsciousness. When these cases recover the ultimate sequelæ are dreaded; that is, epilepsy and insanity,—the former when the lateral and posterior lobe of the brain have been injured, the latter when the anterior lobe of the brain has sustained the injury.

"Now, it would suffice that considerable congestion follows the injury and be maintained for a certain length of time, that diapedesis also takes place, which, resulting in subsequential fibrous tissue, would contract and produce epilepsy or insanity. And this would especially be the case if the patient had inherited or acquired a diathesis. The indication therefore is, should unconsciousness maintain itself over a few hours, to relieve the congestion as soon as possible by draining the cranial cavity. Should such a contusion have occurred to the soft tissues, for instance, we would immediately relieve the condition by local blood-letting, thus removing the tension of the parts.

"The brain is inclosed in an unyielding fibroserous sac, all of which is inclosed in a bony box; when the brain enlarges from traumatism, the very swelling is a compressive factor and leads to the special symptoms in the case. Hence it is my practice, under the circumstances, to proceed to re-

move the general compression of the brain by making a transverse craniectomy, removing a strip of skull about one-fourth of an inch wide. The dura mater is then incised the full length of the wound except over the superior longitudinal sinus. The groove is then packed with two narrow strips of sterilized gauze, each one extending from the temporal region to the vertex; the scalp is sutured, leaving the ends of the strips of gauze protruding on each side. This insures perfect draining, without risk of hæmorrhage or sepsis.

"The gauze drain is left eight days *in situ*, during which time the symptoms gradually disappear. At the end of this period the stitches are removed and the gauze withdrawn. This I believe to be the safest and surest way of restoring brain function with the least risk of after-effects, when contusion of the brain, resulting in indefinite compression, has been diagnosed. Of course, the same procedure, modified to suit the case, is to be resorted to when extra- or intra- dural hæmorrhage exists, and, the clot being removed and the hæmorrhage stopped, the case is then transformed into one similar to the above. During the last four years I have treated twenty two cases after this manner with a uniformly good result.

"A young man, who had only one arm, while riding a bicycle fell upon his head, and being totally unconscious, having remained so during two days, was treated as above described, and rapidly recovered consciousness after the operation. During the first days of the treatment the dressings were constantly saturated with serum and cerebro-spinal fluid. The same uniformly good results were obtained in a number of other cases of concussion treated according to this method.

"Inasmuch as acute meningitis is accompanied by intense congestion of the brain, resulting in compression, as manifested by delirium and spasmodic twitchings, I have resorted to drainage of the cranial cavity in one case, and have obtained a favorable result.

"Finally, I would recommend actual local brain drainage whenever the evidences of brain compression by congestion cannot be speedily relieved by the ordinary measures of drastic purgatives, blood-letting, etc. In forms of chronic inflammation of the brain, due to specific disease, where the symptoms point to a gumma resulting in compression, the exact location of which can be ascertained, of course an operation is indicated to remove the gumma. There are, on the other hand, many cases of brain disease directly associated with syphilis which persistently refuse to improve under the specific treatment. They manifest themselves in mental hebetude and paresis. I have had opportunity of treating five such cases. In each, being assured of the presence of syphilis, and having ascertained that the patient had had the full benefit of mercurial treatment, I did the anterior craniectomy, separated the adhesions which had formed between the dura and skull, opened the dura, packed and closed the wound. Two days after the operation the patient was placed on the specific treatment, and the symptoms now disappeared under its influence, which had resisted the specific treatment before.

"I wish, therefore, to draw special attention to the principle in brain

therapeutics by which drugs produce an alterative effect after an operation, having proved without action before the operation. I have no scientific reason by which to explain this phenomena except the analogy which we find in the use of massage for breaking up inflammatory exudates, and resulting in a better action of iodides and other alteratives than they would exert without the massage. I believe we all have this experience in our practice in treating joints, etc., and I find that the same principle is applicable, to a certain extent at least, in the brain.

"Another principle, so extensively applied elsewhere in the body and so little understood, is that of counter-irritation. There is no doubt that the phenomenon exists empirically, and that an inflammatory condition will be diminished and sometimes arrested by another strong irritation being excited in the neighborhood. The same principle may be applied to the brain, and especially in such cases of alteration in brain function as exist without definite causes and are still called idiopathic. Under this heading can be ranged many cases of epilepsy and insanity. It is my conviction that none are absolutely idiopathic, and that when progressive the cause is not latent, but one which rests on already-known pathological conditions.

"The mere traumatism incident to incising the scalp, trephining, and irritating the dura over the region of impaired function may at times suffice to alter by counter-irritation the original pathological process and be followed by an improvement in the case. We have, on this principle, treated fifteen cases of epilepsy without marked focal lesion. In six cases the improvement was manifested by a marked diminution in the number of epileptic attacks. In the other cases no apparent improvement in the number of attacks followed. In all cases, however, the patient gave evidence of improved mental condition,—that is, clearer understanding and a better memory. In no case was the patient worse after the operation.

"In four cases of insanity with a history of an injury to the anterior portion of the head the anterior craniectomy was performed, a great many adhesions of the dura to the skull were separated, and soon afterward the cases progressed to recovery, and are still in good condition. This treatment has also been applied to numerous cases of microcephalus and arrested development of the brain.

"In cases of idiocy due to microcephalus I have practiced three operations—craniotomies—for the reduction of the sutures of the skull. At the first operation the coronal suture; at the second, the sagittal; and at the third, the lambdoidal suture was made. These operations were performed at three months' interval. The object is to reproduce as much as possible the same sutures which the soft bones of the child possessed at birth. The improvement following in these cases has not been uniform by any means. Some cases have shown marked improvement, both in mental and physical results. The mortality has been 2 per cent. At all events, no case has been made worse by the operation. It would be tedious here to relate the history of all the cases thus treated; but the direct lesson to be gathered is that these imperfectly formed brains surely took a greater

amount of nourishment and improved in function after the surgical interference.

" There is another class of cases that might be styled as tardy or arrested development of the brain. The children reach the age of 10 years, yet are unable to talk and possess only the sum of intelligence which would belong to a child of 4 or 5. The head seems to be of normal size. This is the class of patients which benefit most from the extensive craniectomies and opening the dura mater. An improvement seems to begin very soon; the agitation of the limbs and shrieks which these patients would emit quiet down considerably. The function of the intellectual centres seems to improve especially. Within a month these children have learned to count and to speak sentences until then unknown to them.

" If, therefore, we have not had so flattering results as we anticipated, it may be from the fact that the operations performed were not sufficiently extensive or else were not performed upon the intellectual area. Our operation consists in trephining over the temporal fossa, and removing a strip of skull over the coronal fissure, about one-fourth of an inch wide, directly across the vault to the opposite temporal fossa. Then open the dura throughout, except over the longitudinal sinus. This certainly creates an impression on the brain, during which it is nourished into better function. Whatever may be the criticism upon the mode of procedure, the results speak for themselves. We do not claim anything but altering the nourishment of the brain in these patients and rendering them able to appreciate and retain impressions more easily than before the operation. In other words, this procedure is in no way opposed to or intended to do away with the training which these children get in schools for the feeble-minded. On the contrary, the purpose is to put to the greatest usefulness such brain capacity as is there, so that the children might improve and benefit by the training at school to a greater extent than if no surgical interference had awakened their limited intelligence to its fullest capacity."—*Medical and Surgical Reporter*, June 26, 1897.

Ligation of the Carotid.—Dr. B. Merrill Ricketts, of Cincinnati, Ohio, stated that, only experimental work having been done, but few conclusions could be drawn. Sir Astley Cooper ligated the vertebral and common carotid arteries in a dog, but the object of the operation was not known. In 1866 Ehrman ligated the common carotid for trifacial neuralgia. The operation had also been done by Gross in 1883, Hutchinson in 1885, and Horsley in 1887. The cases operated upon had not been reported in detail. The speaker wished to mention a case operated upon one year ago. The patient was 96 years of age, and since the operation he had been entirely free from pain. The question arose as to the reason for this relief. It was supposed that changes took place in the Gasserian ganglion, but the microscope proved that such was not the case. The experiments extended over three months; twelve dogs were chosen, their common carotids ligated, and the dogs were killed at different times afterward. From these experiments he concluded that pain results from one of two conditions: First, anæmia; second, congestion. He referred to the pain of local meningitis. In case

of congestion, ligation of the common carotids will relieve the pressure and blood-tension. Specimens were shown of the brains of dogs killed on different days; the injection material used was composed of starch, carbolic acid, and aniline.

Dr. J. B. Murphy, of Chicago, asked what percentage of cases of ligation showed degenerative changes in the hemispheres; he also inquired of the author what his theory was as to the pathology of trifacial neuralgia.

Dr. Ricketts said that there were no changes in the hemispheres so far as he was able to discover. Congestion seemed to be a prominent factor.

The Nerve Element in Surgical Pathology.—Dr. J. McFadden Gaston, of Atlanta, Ga., said that the interlacing of the nerves with the different structures of the body gives energy to every vital organ in health, and aggravates their disorder in disease.

Neuralgia in all its protean forms is not a mere functional derangement of the nerve-centres, but depends in most cases upon local modifications resulting from inflammatory action in the neurilemma or parenchymatous structure of the affected nerve. It may also exist in a spurious form connected with compression upon the trunk, or from cicatricial adhesions after operations. The impression that contraction of the nerves gives rise to painful development has led to nerve-stretching; but little advantage has attended this procedure, thus showing that nerve-shortening is not pathognomonic.

Rheumatic complications involving various regions of the body are dependent upon the nerve-supply to the part, and the acute sensibility of such structures renders anodynes of the greatest importance in the treatment of such disorders. Inflammatory processes are accompanied by pain from the entrance of sensory branches of the nerves into the organs, and the means adopted for the relief of inflammation must include the control of the neurotic disturbances by combating pain. It is fair to infer that all agencies for the mitigation of pain have a curative effect upon the structures involved in disease.

The reciprocal influence of body and mind in the progress of most physical disorders depends upon their connection through the nervous system.

Our deficient knowledge of the etiological factor involved in shock inclines the speaker to the view that a continuous baleful influence is propagated to the nerve-centres from the disintegration of the structure involved, and that this may be modified by amputation, with a clean incision through sound tissues above the point of injury, soon after such violence to the parts. The injury inflicted upon the superficial cutaneous nerve-fibrils is extended to the internal organs by the correlation of nerves and capillaries with the viscera. The notable effects observed from cups, sinapisms, and blisters upon the skin are due to the sympathies established through this channel of the nerves. The eruption of teeth in children is attended by neurotic disturbances of a marked character. The various manifestations of the intimate relations of the nerves with the different structures of the

body open the way for comprehending the rôle of the nerve element in surgical pathology.

The development of traumatic neuritis is the most common complication of surgical cases, and there is rarely any extensive lesion which is not accompanied by more or less pain, dependent upon inflammation of the nerve or its neurilemma. The irritation of the peripheral branch of a nerve may set up a train of disorders terminating in tetanus or lymphangitis, and the serious consequences of these affections are notorious. In the latter condition ganglions as well as lymphatics become involved in the inflammatory process, and suppuration is set up in the course of the lymphatics with the characteristic features of pyæmia.

The subcutaneous use of simple distilled water has been resorted to with apparent effect upon the nervous system, and this proves a delicate response of the nerves to the action of agents introduced hypodermically. The transmission of cutaneous modifications to the internal organs becomes in numerous instances simply the expression or delivery of a dynamic influence which operates through the nerves. Instead of local irritation there is a general influence upon the organism corresponding to the special property of the agent employed, and we must attribute the effect to the conduction of medicinal powers from the point of introduction through the various channels of communication with the dependent structures.

The chief features in the relations of the nervous system to other structures involved in surgery lead to the following deductions:—

1. The cutaneous development of the minute branches of the cerebro-spinal system of nerves, and the ganglionic ramifications of the great sympathetic, are so related to the capillaries as to establish a reciprocal action and reaction between them and the great nerve-centres.

2. The vasomotor nerves are so intimately linked with the excitomotor and excitodynamic system of nerves that impressions made through the superficial afferent nerves are conveyed to all the corporeal structures and tissues, so as to produce their effects upon different organs.

3. Reflex phenomena depend upon a complex interchange of local pathological conditions with the nervous ramifications to remote parts of the body.

4. The fountain-head of energy for all the functions lies in the nerve-centres, and by controlling emanations from this source the vital forces will be propagated with regularity and uniformity to all the remote parts of the physical organization. On the contrary, a hurtful influence disseminated from the nerve-centres entails disease upon the different organs.

5. The means to be adopted for averting injurious impressions upon the nerve-centres, and the measures to be used for the correction of their derangement, make up the whole prophylactic agency of hygiene, and include all the therapeutic appliances in the treatment of diseases, as well as the application of surgical measures.

6. Close observation of the various modifications of the nerve element on the physical organism should reveal its direct influence in surgical pathology and lead the surgeon to the adoption of proper means of relief.

Operative Procedure for the Relief of Occlusion of the Jaws.—J. Ewing Mears, of Philadelphia, stated that the most complete account of this condition is to be found in Gross's "Surgery." This surgeon had opportunity to study cases in the Southern section of this country, where the condition is more often found. He recognizes two forms,—the temporary, or spasmodic, and the permanent. Among the many causes of the temporary, or spasmodic, form the speaker mentioned delayed eruption of the molars, alveolar abscess in connection with the teeth, and tonsillitis. The treatment of this form depends entirely upon the cause. If it is due to a wisdom-tooth, the tooth should be extracted. In regard to the permanent form, this is due to cicatricial tissue or to osseous bands which result from the use of mercury. The speaker here showed a cast illustrating the absence of development of the lower jaw. Closure of the jaws may result from inflammation, which is more often rheumatic in character. It may result from blows or concussions, but it is most frequently due to an unrecognized fracture involving the neck of the condyle. The diagnosis of these cases may offer great difficulties. A complete history should be obtained. If a deviation of the lower jaw to the affected side exists, it will aid the diagnosis. The prognosis is favorable. In considering the treatment the speaker stated that cicatricial-tissue deposits tax the skill of the surgeon. Different operations for forming false joints have been advocated. The speaker then briefly described his method of treating these cases. A long, curved needle, armed with strong silk, is introduced in such a way that the silk encircles the cicatrix. The ligature is then drawn backward and forward day by day, and thus inflammation is set up. The jaws are separated and a gag is placed between the teeth. The use of the gag is kept up until the patient is able to open the jaw without it. The speaker then showed photographs of patients operated upon.

Dr. McLain, of Detroit, said that the subject of jaw-closure was very interesting and important, especially because of its rarity. He had had some experience with this trouble. He thought it was difficult to imagine anything more annoying than an ankylosis of the jaw. He referred particularly to the ankylosis following scarlet fever, that being a frequent cause, in his opinion. He related the brief history of the case of a patient who was entirely unable to move the jaw. There was absolute ankylosis on both sides. He tried to relieve the condition by what he thought to be an original operation. He dissected off part of the muscles of the jaw at the angle, and resected a V-shaped piece from each side; he kept up passive movements until false joints were formed on both sides.

Lewis A. Sayre, of New York, hoped that Dr. Mears would speak of the operation first described by Dr. Schmidt, of New York, which consisted in prying open the jaw and constant use of the joint.

The chairman, Reginald H. Sayre, thought that each case must be dealt with according to its merits. Bony ankylosis must be treated on different lines. He related the case of a patient, 6 years of age, who had ankylosis of the jaw for several years before his parents noticed any trouble. Treatment consisted in prying apart the jaws by means of a strong wedge, which was covered with lead to engage the teeth.

Two Hundred and Fifty Bassini Operations for the Cure of Hernia, Without Mortality.—W. B. DE GARMO, of New York, gave the results observed in 250 operations, largely statistics of his own cases, done on 216 patients. Thirty-four operations had been done on both sides; there were 164 males and 86 females; 55 were under the age of 14 years, 43 between the ages of 14 and 25, and 118 had passed the age of 25 years; 8 were between the ages of 60 and 70, and 2 were over 80. The youngest patient was 5 months old, and was operated upon for strangulated scrotal hernia; he recovered in ten days. The oldest patients got well apparently as readily as the youngest. There were 93 scrotal hernias,—55 irreducible and 16 strangulated. The largest hernia was about two feet in circumference, composed of large and small intestines, omentum, and bladder. In 4 cases cysts were found in the canal; in 1 case it was a form of multiple cyst; 207 cases healed by primary union. Suppurative cases started beneath the skin in all cases, and 1 was from gonorrhœal infection. In only 1 instance did a recurrence take place in a suppurative case. All double operations were done at the same time. In 1 case there was a direct inguinal hernia on the left side and a femoral hernia on the right side; both were operated upon at the same time. In regard to suture material, he used none but kangaroo-tendon. He had had no deaths. The permanence of cure was a very important thing to consider. He thought that 90 per cent. of permanent cures was too low, and advanced his percentage to 95. One hundred and fifty of his cases had gone over one year without recurrences. He had had only three actual recurrences up to the present time. The real cause of failure was known in every case, and was reported by the speaker.

DR. MARCY, of Boston, thought the subject too large to be treated in detail, but wished to speak of one or two points which he considered to be essential: the opening in the abdominal wall was at right angles to the abdominal pressure. He pointed out that anatomical defects caused a large proportion of the cases, such as pathological conditions and lack of closure at an early period of life. In treating these cases, questions arise as to the reconstruction of these parts. The speaker then briefly related a history of his researches and publications on this subject. He had operated upon subjects of 3 months and upon those past 80 years of age. In making up the mortality-list he did not think that strangulated cases should be included in the percentage; 90 per cent. had remained cured. He used no truss after operation. The young should be operated upon as well as the older subjects. All persons in the category of truss-bearing subjects are susceptible of certain cure.

DR. OCHSNER, of Chicago, in discussing the age-limit stated that it was apparent to all those who saw many cases of hernia that they did well with a truss until they got an enlarged prostate, when difficulty began. He had done castration and ligature, and section of the cord on the side of hernia. As a result, urination was made easy and the trouble disappeared. The increased pressure on the hernial ring was diminished. This was a principle worthy of consideration. He had seen several hundred children suffering from hernia, and had found that in many cases these children had a

phimosis, and, as a consequence, strained during urination. Circumcision, followed by placing the patient in bed with feet elevated to an angle of forty-five degrees for four, five, or six weeks, would result in a cure. He did not think it justifiable to operate in children under 12 years of age. His experience had been that, practically, all children recovered without operation.

Dr. Ricketts, of Cincinnati, asked, in reference to dealing with the testicle, if any operator had met with a hydrocele accompanying an undescended testicle.

Dr. de Garmo closed the discussion. He stated that to Marcy, of Boston, and not to Bassini, should the credit of the so-called Bassini method be given; that Marcy was the first to attempt to restore the canal to its normal condition. None of the cases Dr. de Garmo operated upon had enlarged prostate. Phimosis he had studied, and had arrived at the conclusion that few children had phimosis so marked that they strain to force urine through the urethra. Examination of children in Hebrew institutions showed that just as many hernias occurred there as elsewhere. He certainly did not believe in elevating the bed, as advised by Dr. Ochsner, but preferred to operate. In regard to hydrocele occurring with an undescended testicle, he had seen one case, in which the tumor was as large as a hen's egg. In two cases of undescended testicle the cord was so short that he could not bring it down. If the cord was long enough, he believed it was best to bring down the testicle. He looked upon the aponeurosis of the external oblique muscle as tendon, and in his operations for hernia treated it as such. He was perfectly satisfied with kangaroo-tendon.

Treatment of Abscess of the Lung.—Dr. Carl Beck, of New York, stated that abscess of the lung was not a rare condition. Its attempted cure should be by purely surgical principles. The diagnosis is much easier than its localization. The absence of tuberculous manifestations and exploratory puncture point to this condition. The principles of treatment consist of thorough evacuation of the pus and drainage. Particular care should be employed in rendering the skin aseptic, twenty-four hours being devoted to this purpose. The speaker then described the operation for entering the pleural cavity. If no adhesions exist the lung may collapse. Palpation of the lung-area and the introduction of the needle into the lung may locate the pus-focus. The Paquelin cautery thrust into the suspected portion is a useful aid in diagnosis; then one should introduce a director and watch for the pus. After the cavity is exposed no irrigation is necessary. Iodoform gauze should be packed into the cavity. The speaker advised blowing with the mouth frequently to increase the discharge. After the operation small doses of morphine may be given. At the end of a week strophanthus and caffeine are advised. Anæsthesia should be given only when the patient is able to stand it. Even cocaine has its dangers. His experience was obtained from four cases, all of which terminated in recovery. In only one of these cases was the diagnosis of lung-abscess made before operating. The history of this one case was given in detail.

Dr. Manley, of New York, thought that purulent formations were

often difficult to deal with, and it would seem to him that in empyema it was a difficult matter to determine whether it was due to a transformation of a serous fluid or whether it was an interstitial abscess. He believed that it was impossible to decide whether it would be better to trust to the exploratory needle or to aspiration. He asked Dr. Beck if, in the case of a child, it would not be better to spare the ribs as much as possible.

Dr. Beck said that if pus was present the ribs should usually be resected, and then one could readily find a way to the pus-cavity. He advised the employment of the x-ray in all cases of resection of the rib.

The Diagnosis of Minor Personal Injuries and their Relation to Accident and Insurance Associations.—Dr. Liston H. Montgomery, of Chicago, Ill., called attention to declarations made by policy-holders which were followed by unwarranted legal proceedings. He reported several cases showing what basis claimants had for demanding damages. He referred to the decision of courts in regard to certain injuries and the possible errors of judgment which may occur. He brought up the question of the liabilities of companies in septic infection.

Anchoring the Kidney.—Dr. R. Harvey Reed, of Columbus, Ohio, stated that hydronephrosis and pyonephrosis are of frequent occurrence, due often to closure of the ureters from a calculus or other obstruction which prevents the flow of urine. Hydronephrosis may exist for from ten to fifteen days without breaking down the substance of the kidney. A kidney absent from its natural position may be replaced sometimes by taxis, but it is liable to return to its former position. When this does occur we are justified in doing a radical operation. The speaker then showed by diagram the futility of attempting to replace a kidney in its natural position and hold it there by means of a tight bandage. The bandage could not be made tight enough to effect this object without interfering with the circulation; one could get only general and not local pressure by this means. He called attention to the objections made to the radical cure of floating kidney and showed pictures illustrating his method of anchoring. He uses the abdominal incision over the normal position of the kidney. The incision is made just large enough to introduce the fingers into the cavity and push the intestines to one side, so as to give a clear field for observation. A long, curved needle with a strong handle, and armed with one thread of silk, kangaroo-tendon, or other material, is passed through the upper border of the kidney between the eleventh and twelfth ribs, and on through the muscular wall out to the back. The needle is unthreaded and withdrawn. The other end is threaded and introduced at a short distance from the point traversed by the first; the threads are then tied over a piece of gauze in a manner similar to the fastening of a staple stitch. The speaker thought that in going in through the lumbar region one would experience greater difficulty in introducing the needle. This was a radical operation rather than a palliative one. The sutures were left in for from ten to fourteen days. In two instances it was his good fortune to be called upon to operate for ovarian trouble in patients on whom he had once performed this operation. One of these operations was performed after an

interval of six months from the first operation and the other after an interval of one and a half years. In both instances he found the kidney in the normal position, the same as the one on the other side. The speaker thought there were objections to the lumbar incision. One does not always find the kidney where it ought to be and is sometimes compelled to hunt for it. By the abdominal route a greater field for observation is obtained.

The Comparative Merits of Different Operations for Stone in the Bladder.—Dr. J. B. Deaver, of Philadelphia, says there are two operations which are quite popular: first, suprapubic lithotomy; and, second, litholapaxy. Litholapaxy is applicable in nearly all cases of stone. The most important condition which would interfere with this operation is stricture in the anterior or deep urethra; still, with Otis's urethrotome, this difficulty can be obviated. Stricture of small calibre in the deep urethra is no contra-indication for the operation of litholapaxy, but if the deep urethra cannot be restored the operation is then out of the question. If the stone is large, perineal lithotomy is the operation. In speaking of enlargement of the prostate gland, the reader of the paper said that no enlightened surgeon of the present day would recommend castration. Cystitis is not a contra-indication in litholapaxy; it is essentially present in stone in the bladder. Almost all senile cases improve under litholapaxy, and this operation does not seem to aggravate the condition of senile cystitis. When the stone is large, litholapaxy is difficult, because to crush a large stone one must use a large lithotrite. In these cases it is better to do a suprapubic lithotomy. Experience is the factor which must decide the operation. For success in this operation it is essential that it be done at one sitting. A large stone with an irritable bladder makes litholapaxy inadvisable. If one is not skillful in manipulation, one had better do the cutting operation. Sometimes the stone is so large as to necessitate a cutting operation. In case of an encysted stone one should not perform a litholapaxy. If the pelvis of the kidney is diseased, the gravity of the operation is increased. Litholapaxy is by far the safer operation, as statistics show. Cutting operations must be made whenever indicated. As regards children under 13 years of age, this operation should not be done on account of the high mortality, and again the urethra is rarely so large as to permit the passage of an instrument; cystitis is frequently set up by the operation. A great advantage of litholapaxy is that the patient can resume work after ten or fifteen days. In operating upon a child one should bear in mind that the first two inches is the smallest portion of the urethra. The speaker advised the use of a lithotrite which does not become clogged; a fenestrated lithotrite is the better instrument. Suprapubic lithotomy is the operation that should be done by those who deal with stone in the bladder but occasionally. For old men, in whom stone is associated usually with enlarged prostate, suprapubic lithotomy is the operation. One should remember that in pelvic deformities, ankylosis of the hip-joint, etc., one may not be able to place the patient in the lithotomy position. The great advantage in the operation of litholapaxy is that it lessens the sojourn in bed, and the sequelæ of cutting operations are not present.

Some Additional Facts Relating to Skin-grafting, Technic, etc.—Dr. Z. J. Lusk, of Warsaw, New York, opened the day's proceedings with a paper on this subject. He referred briefly to his own experiments and writings, and the results he had obtained, relating in detail five cases. He emphasized the fact that great care must be taken in separating the cuticle, and that it should be kept free from moisture. He obtained his cuticle from blisters produced by heat.

Dr. George M. Sternberg, of Washington, D. C., thought it remarkable that a temperature high enough to raise a blister did not destroy the cuticle. He thought that experiments should be made to find at what temperature the cuticle is destroyed. He would advise that some such experiments be instituted.

Dr. R. H. Sayre said that he had been surprised to note the resistance of the living tissues to dry hot air. He had used this treatment in chronic arthritis, and exposed joints to a very high degree of heat. Skin will endure from 350° to 400° F., which he had thought hardly possible. Some can stand not more than 180° to 220° F., but many can stand much higher than 400° F. He had noticed that after a few days had elapsed ulcerated spots, etc., sometimes appeared, which ulceration was difficult to heal.

Dr. Manley, of New York, said that Dr. Lusk's plan was not true skin-grafting, but was epidermal grafting. He could not recommend this manner of grafting in the class of cases described by Guermonprez, in which he covers in a large surface, as of the whole limb. He thought Thiersch's method a very good one. When extensive destruction had not been done, he thought the reader's plan a very good one, especially when motion was not great.—*New York Medical Record*, July 17, 1897.

GREAT BRITAIN.

British Gynæcological Society.

The Mechanism of Inversion of the Uterus.—Prof. Hector Treub, of Amsterdam related a case of inversion of the uterus in a patient who had been pregnant three times. Each pregnancy had ended in abortion, and the last abortion was seven years ago. For some time she had observed that something was protruding in the vulva, but she could always reduce it easily. Eleven weeks ago a prolapse appeared suddenly, and could not be reduced. This caused much pain, and brought about hæmorrhage to the extent of making her swoon. Her general health had deteriorated; she had lost meat-juice-like fluid and had been feverish. On examination a total inversion of the uterus, including the cervix, was found. Hysterectomy was performed and the patient made a good recovery. Besides the œdematous mucous membrane, the uterus only showed a very small intramural fibroid near the fundus. Microscopical examination showed that the muscular tissue was in a normal condition, and that there was no question of atrophy of the uterine wall. The author then discussed the views held as to the mechanism of inversion. In only one group of cases was this wholly understood,—namely, in those following immediately after labor. The two

elements upon which, according to Gaillard Thomas, the inversion depended were there present,—namely (1) relaxation and inertia of the uterine walls; (2) downward traction or pressure. In other cases the explanation was less obvious. The theories of Küstner and of Schauta and Gottschalk were insufficient, and Professor Treub submitted the following theory: The base of a sessile tumor cannot contract because of the implantation of the tumor, which diminishes or altogether abolishes the contractility of that part of the wall. And it cannot be that only the contractility of that base is diminished; the surrounding parts must necessarily be feebler within a greater or smaller circumference. If from the outset the tumor was intramural, the smaller degree of resistance of that part of the uterine wall, coupled with intra-abdominal pressure, may occasionally bring about a slight beginning of inversion; and, when this is the case, the conditions are essentially the same for sessile and intramural tumors and for the partial inversion described by Rokitansky. A circle of uterine tissue is abruptly curved in the place where Rokitansky found the external indentation. In that incurved circle the uterine muscle must be absolutely paralyzed; and this paralysis, again, will not be confined to a linear circle, but, gradually diminishing, will extend over a greater or lesser surface. The contractions of the normal part of the uterine wall will try to expel the part of the wall that acts as a foreign body. These expulsive efforts may slightly increase the inversion as far as the paralysis surrounding the circle of inversion permits, thus displacing the circle itself and paralyzing another part of the uterine wall. Necessarily the extension of the partial paralysis proceeds farther in the uterine wall, and by the repeated action of this muscular play the inversion may gradually become complete as regards the body of the uterus. As soon as the body is inverted there is no longer any excitement for uterine contraction, and the inversion of the cervix generally does not take place; and it is the intra-abdominal pressure, again, that may invert the cervix.

Dr. Purcell on one occasion had assisted his colleague, Mr. Elam, in a case of tumor in the vagina. The tumor, which proved to be an inverted uterus, was removed. The presenting surface was epitheliomatous; there was no tumor growth to cause inversion by traction.

Dr. Heywood Smith remarked that Dr. Purcell's case supported Professor Treub's theory. The epithelioma might have caused paralysis of the underlying muscle, and so have been the starting-point of the process.

Royal Academy of Medicine in Ireland.

Removal of Ovaries by Vaginal Colpotomy.—Dr. Jellett exhibited two cirrhosed ovaries removed by vaginal colpotomy, and said that, where it was possible to remove the ovaries by the vagina in a woman who was not going to become pregnant, he thought that by such a procedure there was very great absence of shock and less risk of sepsis, but the latter fact he could not explain. The very small size of the vagina and the shortness of the ovarian ligaments made the difficulty. He believed the pain to have been caused by pressure of the fibrous tissue on the nerves in the ovary.

Alfred Smith showed three large dermoid cysts of the ovary which he

removed from patients aged 21, 38, and 24, respectively. The patients made good recoveries.

Dr. Kidd exhibited a double dermoid, which he had removed from a patient aged 33. After operation the temperature rose to 100.8° F., but fell again next morning, and never again touched 99° F. She made an uninterrupted and excellent recovery.

Dr. Purefoy exhibited two specimens of myoma uteri removed by panhysterectomy. He thought it would be well to leave the ovaries behind in such cases.

Hæmorrhage into the Broad Ligament Complicating the Puerperium.—J. H. Glenn in January, 1894, removed a left ovarian cyst from a young married woman, whose age was stated to be 27. The operation was simple, and the only feature of interest was an excessively varicose condition of the pedicle. This gave rise to a little more hæmorrhage than usual, but was carefully ligatured, and the patient went on uninterruptedly. On January 27, 1895, Dr. Glenn delivered her of a living female child by forceps. On September 19, 1896, he was called again, but the baby was already born on his arrival; this time it was a boy, which was interesting, as she had only the right ovary. The uterus was firmly contracted, the placenta came away easily, and there was no oozing. On palpation there was nothing now to be detected, but he did not feel satisfied, as her pulse was 110 and her aspect anxious. About fifteen minutes after the expulsion of the placenta he felt a swelling on the left corresponding to the height of the firmly-contracted uterus, and strangely simulating a uterus bicornis. He sent for Dr. Smyly. The swelling was soon almost as high as the lower border of the ribs in the mammary line, but little over the middle abdominal line. On examination, taking into consideration the way the patient was holding her own, an expectant course was pursued and justified by the event, the patient never losing ground, her highest temperature being 99.4° F. Dr. Glenn believed that there was a rupture of one of the varicose veins as seen in the pedicle, and predisposed to this by the softening of pregnancy and the strain of parturition. The other possible condition was an incomplete rupture of the uterus; against this might be placed no pelvic deformity, no prolonged labor, no lacerated cervix; and the pulse, though rapid, did not display the intermittent character, nor the patient the very profound shock usually associated with this condition. He had an opportunity of examining the patient five months after confinement, and the hæmatoma had dwindled to the size of a fœtal head and was distinctly fluctuating. Reference was made to a case reported by Tergrigoriantz, in which a broad-ligament hæmatoma through pressure necrosis communicated with the posterior vault, and was emptied of offensive bloody fluid after four months.

Dr. Winifred Dickson said that it seemed to her difficult to imagine how the broad ligament could have become distended so suddenly to allow the tumor to reach up to the ribs. On the other hand, the blood must have been confined or fatal hæmorrhage would have occurred.

DR. PUREFOY said the case recalled to his mind another in which a woman was operated upon for an ovarian tumor. About a week afterward, when the patient was doing well, she unfortunately ate some delicacies brought her by her daughter. Violent vomiting and gastric disturbance followed, and a hæmatocele was produced, owing to the rupture of a vein. Convalescence was delayed, but complete recovery ensued.

Selections from Reports of Members of the Annual's Staff of Correspondents.

Denmark.

DR. F. LEVISON,
REFERENT FOR DEN DANSK LITTERATUR VEDRØRENDE: ALMINDELIG MEDICINSK PATHOLOGI OG THERAPI, DERI INDBEFATTET, NERVE- OG SINDSSYGDOMME, PÆDIATRIK, OBSTETRIK, GYNÆKOLOGI, HYGIEINE, DEMOGRAPHI, RETSMEDICIN, PATHOLOGISK, ANATOMI, BAKTERIOLOGI.

Alle medicinske Böger, Disputatser, Monographier, Tidsskrifter, etc., der adkomme i Danmark bedes sendt til
DR. LEVISON,
Norrevoldgade, 13,
København.

Diphtheria.—FIBIGER (*Hospitalstidende*, p. 93, 1897) was called upon to combat an epidemic of diphtheria recurring again and again in a public school. He commenced by examining the throats of all the scholars,—134 individuals in all. In 22 of the persons examined, bacillus diphtheriæ, or bacteria resembling those, were found in the mucus of the throat, but only in 8 were true bacilli of diphtheria found, while in 10 cases the short bacilli of Martus and in 4 cases long bacilli were present, which did not grow in the cultures in the same manner as the bacilli of diphtheria. All the individuals, in the throats of whom dubious bacilli had been found, were isolated for a short time, while the persons whose throats were inhabited by true bacilli of diphtheria were completely isolated for one or one and one-half months, and further kept away from school for some time, until repeated bacteriological examination had proved their throats to be free from the infectious bacilli. By these measures the epidemic was checked, while gargles and other treatment did not seem to have any influence on the vitality of the bacilli.

Pathogenesis of Delirium Tremens.—JACOBSON (*Hospitalstidende*, p. 143, 1897) has collected 247 recovered cases of delirium tremens, observed by himself in order to study the pathogenesis of this disease. Of these cases 202 were pure and 45 complicated by other diseases.

Of course, abuse of spirits is a necessary condition to the evolution of delirium, but it is not sufficient to bring about the attack, as many potators indulge their vice without ever getting delirium. Among the occasional causes, traumatic lesions have specially been mentioned, and it is true that many of the patients come to the hospital with such; but, on close examination, it appeared that the lesions were acquired either after the commencement of the delirium or in the period of incubation, and, consequently, the traumatic lesion cannot be made responsible for the attack. In 15 per cent. of the patients it was noted that they sometime ago had received a wound of the head; and perhaps a lesion of the skull or the brain, resulting from such a lesion, may be regarded as a predisposing factor.

Twenty-two cases were complicated by pneumonia, and when, also, the lethal cases observed by the author are taken in account, more than 12 per cent. of all cases of delirium tremens were combined with pneumonia.

Generally the delirium commenced on the fourth day of the pneumonia, but the evolution of the two diseases is not congruous; either of them may finish without influencing the other disease. Although the delirium tremens cannot be regarded as caused by the action of the pneumococcus, it resembles, in all features, an infectious disease: it has a stage of incubation,—a duration of about four days; it ends with a critical sleep; is accompanied by rise of temperature and almost in all cases by albuminuria, and when autopsy is made the spleen is generally found to be the seat of parenchymatous degeneration, as well as the heart, the kidneys, and the liver.

In the opinion of the author, delirium tremens occurs when a brain, deteriorated by chronic alcoholism, is influenced by a toxic agent, either due to the action of bacteria or to auto-intoxication, from diseases of the digestive tract, the kidneys, or the liver. Jacobson regards the therapeutic treatment as quite incapable of abbreviating the duration of the disease; the critical sleep cannot be induced by any drug.

Connection Between the Uric-Acid Diathesis and Various Diseases.—LANGE (*Hospitalstidende*, p. 1, 1897) and F. LEVISON (*Ugeskrift for Läger*, p. 339, 1897) discuss the connection between uric-acid diathesis and different diseases. Lange supports the theory that a great portion of nervous diseases—such as neuralgia of n. trigeminus, and paralysis of n. facialis, as well as iritis, different skin diseases, asthmatic attacks, etc., and especially a certain form of mental depression—may all be caused by the influence of the uric acid dissolved in the blood. He gives numerous protocols of patients to illustrate the different diseases and to support his opinion of the nexus between them and the uric-acid diathesis.

Levison, on the contrary, strongly opposes the use of the term "uric-acid diathesis"; he states that the word "diathesis" has no sense if it does not signify the presence of a microbic or toxic substance circulating with the blood and causing different disorders. Now, uric acid cannot be regarded as a toxic substance; it has been proved, as well clinically as by experiments, that even a large quantity of uric acid may be found in the blood or introduced experimentally in it without causing any disorder as long as the uric acid remains in solution; it can only be variable when it is deposed in the kidneys as crystalline uric acid or in the body as biurate. The nexus between uric-acid excretion and the different diseases must consequently be explained otherwise. In some cases the diseases give rise to destruction of leucocytes, causing the production and excretion of much uric acid; in these cases the hyperuria is the consequence of the primary disease. In other cases the kidneys are irritated by the continuous deposition of uric-acid crystals, and this irritation of the kidneys causes reflex neuralgias in different nerves and also the mental depression. This nexus is very commonly seen in children. Levison has collected twenty-one cases of mental depression in children from 2 to 13 years of age, caused by uric-acid deposits in the kidneys.

In all cases treatment at some alkaline spa made the mental symptoms disappear in a few days. Although the symptoms rapidly disappear, the treatment must be continued for a very long time, perhaps for years, as the mental depression comes back as soon as the urine does not keep the uric acid dissolved; in many cases the deposition of uric acid is caused by destruction of leucocytes, giving rise to hyperproduction of uric acid, and there may be occasion to give the patients tonics,—such as iron or arsenic.

Japan.

DR. W. N. WHITNEY,

CORRESPONDING EDITOR FOR MEDICAL LITERATURE OF JAPAN.

All books, theses, monographs, etc., published in Japan should be sent to

DR. W. N. WHITNEY,
U. S. Legation,
Tokyo, Japan.

The Bubonic Plague.—DR. J. M. ATKINSON, Principal Civil Medical Officer of Hongkong, has furnished the government with a special report on the prevalence of bubonic plague in Hongkong during the years 1895 and 1896. This is a subject that has been very extensively reported upon by other medical men, but Dr. Atkinson's contribution is valuable in that it brings together in concise form most of the main facts connected with our knowledge of the disease in Hongkong. In 1895 the total number of cases reported was 44; in 1896 it was 1204. Dealing with the latter year, Dr. Atkinson shows that the percentage of mortality among the Chinese was 89.5; but in cases dealt with at the hospitals the percentage of deaths was only 74. Statistics forwarded to Saïgon from Bombay show that in 50 cases treated with Dr. Yersin's serum the death-rate was only 34 per cent., and there appears to be good reason for believing that, after allowing a discount for the extravagant claims of Dr. Yersin's friends, his serum is of considerable value in the treatment of plague cases.

Dr. Atkinson states the general conclusions to be drawn from the experience of 1895 and 1896 as follows: 1. That the occurrence of plague is favored by (*a*) long prevalence of drought or of abnormally low rain-fall; (*b*) atmospheric temperature below 82° F.; (*c*) absence of sunshine; (*d*) general insanitary conditions, such as obstruction to the free access of light and air to domestic dwellings. 2. That the steps to be taken to retard the progress of the disease are (*a*) general cleanliness and the free admission of light and air to domestic dwellings; (*b*) the immediate isolation of the sick and those who have been in close contact with the disease; (*c*) the careful and systematic disinfection of all premises in which cases occur and of latrines.

Influence of Schools Upon the Physique of the Japanese.—In a recent issue of the *Kyoikudan*, an educational periodical, MR. YUKICHI TERADA, a Councillor of the Department of Education, contributes a very interesting article about school-hygiene in Japan. The importance of this question cannot be overestimated, for the prosperity—nay, the very existence—of the Japanese Empire depends upon the strength, mental and physical, of the rising generation. Mr. Terada remarks, with deep regret, that in the

course of his extensive tours of inspection throughout the country he has seen endless numbers of pupils with pale faces, stooping gait, defective eyesight, and so forth, and he has heard many parents complaining that since their children were put to school their appetite decreased and they were liable to catch cold or feel headache on slight causes. Mr. Terada does not offer us any statistical evidence in this context, but avers that this defect is worse in proportion to the density of population in the place where a school is situated. He contrasts the physique of Japanese common-school pupils with that in Germany, and declares that in point of stature boys are lower, on the average, by 1.9 inches, girls 1.8 inches, while in point of weight the former are less by 534 *momme* and the latter by 587 *momme* than in Germany. Among numerous causes that underlie this phenomenon, the writer considers the excessive school-work imposed on pupils one of the most potent. Coming to students of middle schools, higher schools, and the university, Mr. Terada's information is less abstract. According to the examination which the Kochi Middle School conducted, it was discovered that out of 100 only 31 were physically perfect, 36 were tolerably good, 13 had swollen lymphatic glands, and the remaining 20 were so defective in constitution and nutrition as to require serious warning. The health record of the five higher schools for the last year is similarly bad. Out of 100 students, 1.2, in general, leave school owing to feeble health, while 7.3 out of 1000 die of sickness,—a rate of mortality that is five or six times more than the ordinary average among other young men of similar age. The examination carried out in the university among freshmen students and the third-year, or graduating, students in May of last year revealed an alarming result. The students after two or three years generally lose in weight, chest-measurement, and also in lung-capacity. They are at the age when bodily development should be most active, and yet the result of the physical examination reveals that the contrary process takes place. Weak eyesight is another defect common to Japanese higher-school students. According to the examination carried out by the Osaka Middle School, out of 100 students, 18 had defective sight in the first-year class, 27 in the second-year class, 50 in the third-year class, 54 in the fourth-year class, and 34 in the fifth-year class. Out of 100 candidates for admission to the medical departments of the five higher schools 20 to 40 are generally found to possess defective eyesight, while, out of 100 university students, as many as 63 are weak-sighted in the College of Literature, 58 in the College of Science, 46 in the College of Engineering, 39 in the College of Law, and 29 in the College of Agriculture. Nor are normal-school students physically more perfect than students of other schools. In general, over one-third are below par. One of the causes of this physical defect must be attributed to defective nutrition.

Health in the Japanese Army.—At a recent general meeting of the Sanitary Society of Japan SURGEON-COLONEL KOIKE delivered an interesting address on the condition of health in the army. The first topic discussed was that of diet. As to the question which is better adapted to form the staple article of food for the army, bread or rice, upon which opinion has

always been divided, there are men strongly persuaded that the abandonment of rice in favor of bread is a great desideratum from points of view of hygiene as well as of military exigencies. The navy, under the advice of its medical officers, has long since adopted a system of diet in which rice forms only a secondary place, the principal articles employed being biscuits and barley. The result has been exceedingly encouraging, one of the most conspicuous advantages of the new form of diet being the remarkable decrease among seamen of kakke, a very common malady among the Japanese. As to the working capacity of the men-of-war's men, they compare very favorably with the troops on shore. In smartness, intelligence, and power of endurance they are, we believe, superior to the men in the army. For our own part, we are inclined to think that in the matter of diet the navy has set an example which the sister-service on shore would do well to adopt. But the great majority of medical authorities in the army think otherwise, and, on a technical subject like this, the amateur has, of course, to bow to the judgment of specialists. The soldiers, then, are fed principally on rice, and Surgeon-Colonel Koike is convinced that, all things considered, it is the best form of diet for our army. Looking at the matter from a military point of view, he remarks with truth that it is a great advantage for an army to adopt a form of diet the articles of which can be obtained easily and in abundance in time of peace as well as war. He illustrates the point by reference to the war of 1894–'95. Wherever the Japanese forces moved during that war rice could be purchased in sufficient quantities to meet the deficiency in the supply sent from home. And in every village our soldiers found ready for use all the appliances required for the preparation of rice. Had any diet other than rice been adopted Dr. Koike is confident that the commissariat department would have been very severely taxed, and that our arms would not have been so completely victorious. As to the hygienic side of the question, the surgeon-colonel confesses that, when he was fresh from the university, he, too, was one of those who believed in the exploded theory that the principal office of food was to supply the wear and tear of the tissues of the body. But, according to the new doctrine, 95 per cent. of food goes to generate heat, which is the motive force of human mechanism, the remaining 5 per cent. being utilized for the purpose of renewing the waste in the system. Anything that can satisfy these conditions is fitted to be a staple article of food. From the results of very minute experiments, conducted at the Military Medical College, under the superintendence of Surgeon-Colonel Mori, it has been discovered that rice prepared without the admixture of any other grain is more easily digested, more readily assimilated into the system, and more abundantly generates motive force, than foreign food or barley mixed with rice. The daily ration in the army is 6 *go* (9½ tenths of a quart) of rice for each man, besides 6 sen worth of vegetables, meat, and fish.

The next topic dealt with by Surgeon-Colonel Koike is the clothing of the men. There is little under this heading that is of sufficient general interest to demand reproduction in this article.

Greater interest attaches to his statements about the outfit of soldiers

in time of war. The heaviest outfit in the world is that of the Swiss soldier, weighing 43 kilograms, while the most lightly equipped of all European soldiers are those of England, whose kit weighs 28 kilograms. The war equipment of the Japanese soldier is lighter still, being in weight $25\frac{1}{2}$ kilograms. The military authorities recognize the necessity of still further reducing the weight of the outfit, it being regarded that about $19\frac{3}{10}$ kilograms is the proper limit for their infantry. But, practically, it is well-nigh impossible to effect such a reduction. After mature consideration of various points demanding attention in connection with this subject the surgeon-colonel states that the authorities have been able to reduce the weight to 21 kilograms. This is doubtless a great improvement, the significance of which is evident to anybody acquainted with the importance of the question.

In the matter of military architecture, too, wholesome improvement is observable from the hygienic point of view. In the barracks of the Imperial Guards at Takebasi and some other barracks in Tokyo, constructed after the old French method, the principal feature of which is the grouping of buildings in the form of a square with a court-yard in the middle, the death-rate was 6.7 per cent. But of late the War Department, with the advice of a Construction Committee, including among its members some medical officers, has adopted a more healthy form of construction. The new buildings are in parallel rows, with sufficient space between them. Greater attention has also been paid to ventilation and admittance of light, as well as to the means of warming the apartments. Attention is likewise directed to the adaptation of construction to the special requirements of particular districts in view of different climatic and other natural conditions. Considerations of economy do not always allow the elaboration of these principles so completely as the surgeon-colonel would like to have them elaborated. But, so far as practicable, improvements have been effected in the new barracks. The result has been most satisfactory. The death-rate of the Third Regiment of Guards at Akasaka has been reduced to 4.73 per cent., and that of the Fourth Regiment at Aoyama, to 5.05 per cent., while the Third Regiment of the First Division shows the unusually good record of 3.64 per cent. The general average of death-rate during the eight years, from 1878 to 1885, was 12.9 per cent., but, thanks to steady improvements in the sanitary conditions of barrack-life, the rate stood at 4.4 per cent. in 1893. According to the speaker, the German army has the credit of showing the lowest death-rate, and she is closely followed by the Japanese army.

Clinical Notes and Therapeutic Suggestions.

Electric Traumata and Their Treatment.—Norvelle Wallace Sharpe, of St. Louis, in an interesting review of this subject concludes that (1) the skin is the chief factor of resistance in an individual sustaining an electric shock, and (2) that moisture of the skin, and, especially, marked salinity of sweat, favors access of current. (3) Humidity and temperature of atmos-

phere and season of year are important factors in determining individual resistance. (4) Electric traumata differ from ordinary burns or scalds in duration. (5) Electric traumata differ from ordinary burns and scalds in results (noticeable in severe cases). (6) Prognosis in all cases should be guarded. (7) Rigid asepsis should be followed in the manipulation of all cases. (8) Sloughs are best removed by solution of pepsin, thus: Scale pepsin, 2 grammes; hydrochloric acid, U. S. P., 1 cubic centimetre; distilled water, 120 cubic centimetres; washed off in two hours with peroxide of hydrogen, pyrozone, or hydrozone. Application to be repeated as may be necessary. (9) Deep disintegration demands especial watchfulness for the detection of bone or joint invasion. (10) Necrosis of bone should be combated by injecting a 3-per-cent. solution of hydrochloric acid in distilled water, repeated not more frequently than every two hours. Every second day the acid-pepsin solution (see above) should be used until the necrotic masses are cleared away, when gauze packing should follow. In cases complicated by tuberculosis a 10-per-cent. mixture of iodoform in glycerin, or a 7- to 10-per-cent. solution of iodoform in ether, should be subsequently employed. (11) Persistent bone or joint invasion with necrosis requires amputation or, in some cases, resection. (12) Degenerative division of important nerves should be subsequently repaired by Levering's method. (13) Degenerative division of important arteries and veins should be repaired by Murphy's method, when possible. (14) Granulating areas, after sterilization, should, when feasible, be covered by large skin-flaps. (15) When the healing process has started, peripheral skin growth is hastened by the use of a layer of sterile gauze saturated with an iodoform-glycerin mixture and covered by rubber tissue.—*American Journal of Surgery and Gynæcology*, July, 1897.

Original Methods for Detecting and Measuring Abduction and Adduction of the Thigh.—Phil. Hoffmann has made use of two methods that he has found to be simple, accurate, and always at hand. The first is a test for instantaneously detecting abduction or adduction, but not to determine the amount. Placing the two limbs together, it will be observed if one side is adducted that the furrow at the bend of the thigh on that side will be deeper and longer than the one opposite; but if abducted the furrow will be shallower. The genitals and the fold between the buttocks will always point toward the adducted and away from the abducted thigh. A mere glance at these folds is enough, therefore, to determine the presence or absence of either of these two positions.

The second test, used to measure the amount of lateral deviation, for the purpose of keeping accurate record, is as follows: "By means of a tape-measure find the distance from one anterior-superior iliac spine to the other, and exactly midway between make a dot with ink or aniline pencil. Make another mark directly over the symphysis pubis, which can readily be found by feeling for the junction of the pubic bones; or, in the female, it corresponds to the anterior extremity of the cleft between the labia majora (anterior commissure), and in the male to the centre of the root of the penis. You now have two fixed points in the central line of the pelvis.

Run a string or thread (do not use a tape, as it is too broad and may lead to error) from the upper to the lower mark and on down the thigh and leg to below the soles of the foot. Now, if the limbs are in a straight position, the string should fall midway between the two inner condyles and internal malleoli. If either limb is abducted, both the condyle and malleolus will be situated outside the string; if adducted they will be inside."—*St. Louis Medical Review*, June 12, 1897.

Treatment of Dysmenorrhœa.—The best treatment in dysmenorrhœa preceding the flow and associated with a movable uterus is, according to J. E. Langstaff, the injection of 10 minims of a 3-per-cent. mixture of Churchill's tincture of iodine and water into the uterine cavity every four or five days during the intermenstrual period. The injection is effected by means of a fine glass tube, curved an inch from one end and expanded into a funnel-shape at the other; a piece of sheet rubber covers this end, and by the pressure of the finger the contents are passed into the uterine cavity. In the majority of the cases treated the patient was unmarried, and had previously required opiates for the excessive menstrual suffering. The treatment has no effect when there is pelvic inflammation or disease of the ovaries and tubes; yet in suitable cases it may prevent the development of a neurotic temperament.—*Brooklyn Medical Journal*, May, 1897.

Bromine Compounds.—The bromides are not as harmless drugs as some have thought, and in some cases they are capable of producing maniacal delirium whether the patient be sane or insane. If they are used, the sodium preparations are to be preferred to those of potassium.—H. A. Hare, M.D., in *The Therapeutic Gazette*, June 15, 1897.

Poultices in Bronchitis and Broncho-pneumonia in Children.—A. W. Senior states that poulticing of the chest in bronchitis and broncho-pneumonia is unscientific and prejudicial to the welfare of the patient. The difference in the temperature of the poultice when applied and when removed is such that one might as well be continually moving the child from a warm room out into the cold every few hours. The weight of the poultice must also be taken into consideration. The disadvantages of poultices more than counteract any beneficial influence they may have.—*British Medical Journal*, April 3, 1897.

Graves's Disease.—Dr. R. G. Curtin concludes as follows an article of this affection: 1. Graves's disease is hereditary. 2. The marriage of those having such an inheritance should be discouraged. 3. A person who is known to have such an inheritance should reside at an elevation of more than 500 feet. 4. They should avoid great excitement or any highly exciting occupation. 5. They should not reside in a limestone region. 6. They should not reside in a malarial district. 7. It would be wiser to not select a home in a locality where the disease is common, no matter where the locality may be. 8. They should be careful to avoid all those things that are likely to produce anæmia. 9. They should avoid excessive study, any prolonged mental or sexual strain, or anything which can bring on a

neurasthenic condition.—*International Clinics*, Volume IV, Series VI, p. 78, 1897.

Intramuscular Injections in Syphilis.—Lukasiewicz gives the results of treatment of 500 cases by intramuscular injection of a 5-per-cent. solution of perchloride of mercury, 1 centimetre being injected into the gluteal muscles once a week. On an average, six injections were used for each patient. The cases included all stages of syphilis in both males and females, varying in age from 16 to 65 years. The author states that severe secondary lesions, including rupia, iritis, periostitis, choroidoretinitis, and laryngitis yield to this form of treatment, also early tertiary conditions, such as cutaneous gummata. He points out a peculiar phenomenon which appears after the first injection, —namely, an increased distinctness of the syphilitic rash,—and compares this to the reaction which follows the injection of Koch's tuberculin.—*Wien. klin. Wochenschrift*, April 22, 1897.

Treatment of Rheumatic Paralysis.—G. Martin describes seven cases of rheumatic paralysis involving the external rectus in subjects exempt from any syphilitic manifestations, as well as of tabes, and in whom the affection was manifestly associated with a rheumatic diathesis, treated successfully with hypodermic injections of sublimate.

The good effects of this medication were revealed to the author, accidentally, in the first case treated. This patient was suffering from paresis of the external rectus of the left eye, coming on suddenly, a few hours after having waded in a cold stream of water. Dr. Martin did not see the case until eleven days later, and practiced in the temporal region an injection of a liquid which he believed to be a solution of nitrate of strychnine. On the following day he was surprised to find marked œdema at the site of puncture, and at the same time a decided improvement in the paralysis. Seeking the cause of such unexpected phenomena, he discovered that instead of a strychnia solution he had employed a 1-per-cent. sublimate solution. This treatment was continued, and, at the end of ten days, during which time six injections of mercury were made in the temporal region and three injections in the back, the patient was entirely cured of the affection. Since then Dr. Martin has had occasion to treat three other similar cases presenting the same affection. In the first case the external rectus had been afflicted with paresis for three days, and a cure was obtained at the end of nine days, employing, in all, eight injections. In the second case there existed paralysis of one month's duration, which was recovered from in eighteen days after fourteen injections. In the third case, who had paralysis of three months' duration, it disappeared in ten days after employing eight injections. In the last two observations the affection remained absolutely stationary until the injections were employed, when, however, it began to disappear. Improvement was noticed after the third or fourth injection. —*American Medico-Surgical Bulletin*, June 10, 1897; from *La Méd. Científica*.

Erysipelas.—The probable point of infection is thoroughly cleaned with a strong solution of carbolic acid or corrosive sublimate, and the following solution is penciled over it:—

℞ Tannini pur.,
Camphor, ... āā ℥ij.
Ether sulph., ... ℥ij.

In a few days the disease will be checked.—*Pediatrics*, February 1, 1897.

Puerperal Septicæmia Treated by Antistreptococcic Serum.—W. Edmunds records a case in which the serum was given a fair trial. That it was a case of genuine streptococcic infection was shown by the examination of pus from an abscess near the knee. Further, no other surgical treatment was carried on during the administration of the antitoxin. The case is thus free from two of the common fallacies which prevent our forming a due estimate of the value of such injections. The patient made a complete recovery, which the author thinks was entirely due to the antitoxin. The injections produced, in varying degree, pain, erythema, and, on four occasions, an abscess. Possibly this was due to some decomposition having taken place in the bottle after it was opened, and it will be best, therefore, to have the serum supplied in single-dose bottles.—*American Journal of the Medical Sciences*, April, 1897.

The Superiority of Lactophenin Over Phenacetin.—George Thompson, of St. Louis, extols the merits of lactophenin, which, as is well known, is a coal-tar product, a definite chemical body, differing from phenacetin in that lactic acid replaces acetic acid. The substitution of lactic acid seems to overcome almost entirely the possibility of cardiac depression or the conversion of hæmoglobin into methæmoglobin, an attribute only too frequently met with in antipyrin, acetanilid, and phenacetin. At the same time, lactophenin possesses every desirable property of phenacetin, with the additional one that, lacking the usual untoward properties of this body, it may be given, if necessary, in largely increased doses with impunity, and will reduce a hyperpyrexia of nervous origin which resists all other antipyretics. As an analgesic it is equal, according to the author, to the best pain-reliever in the materia medica, and it may be given with confidence in neuralgia from any cause other than traumatic. Neuralgia is a condition subject to recurrence and should never be relieved by any agent liable to cause a drug-habit by repetition. Besides, as an anodyne, morphine is greatly overestimated by the profession, even in the treatment of traumatic and colicky pains. He does not mean to advocate any coal-tar product as an anodyne in this class of pain, because herein is the peculiar realm of morphine; but for any form of neuralgia—whether malarial, rheumatic, or dyspeptic, or whatever the cause may be other than traumatism or active inflammation—lactophenin, he states, will be found safe and satisfactory. The author relates several cases in support of his opinion that lactophenin is greatly superior to phenacetin and other members of the coal-tar group of antipyretics and analgesics.—*Tri-State Medical Journal* May, 1897.

Typhoid Fever in the Very Young.—G. Jamieson Martz, of German, O., states that—although the older authorities on practice little mention

typhoid fever in young children, and at the present time there are many physicians who are yet skeptical as to the occurrence of typhoid, in the *very* young, at least—he has treated, in the past six years, seventeen cases of unmistakable typhoid fever in children ranging from 14 months to 5 years of age. Three of these cases were less than 24 months old, and in each instance there were other members of the family suffering from the fever at the same time. He has observed that these cases go in apparent epidemics. He gives the history of three of the most interesting cases, with a few observations as to the course of the fever and the diet and treatment in the same.—*Cleveland Medical Gazette*, July, 1897.

The Treatment of General Septic Peritonitis.—A. J. McCosh states that the use of sulphate of magnesia—1 to 2 ounces in saturated aqueous solution, injected into the small intestine during laparotomy for general septic peritonitis—is a valuable addition to the usual methods he has employed. The steps of his technique are as follow: (1) chloroform narcosis; (2) a free incision—five or six inches; (3) usually evisceration; (4) removal of the cause of peritonitis; (5) irrigation with salt solution at 110° to 112° F.; (6) sulphate-of-magnesia solution injected into small intestine; (7) drainage; (8) partial closure of wound. As to after-treatment, he gives 10 grains of calomel supplemented by rectal stimulation.—*Annals of Surgery*, June, 1897.

Vertigo and Ocular Defects.—William Osler states that the most satisfactory explanation of the occurrence of ocular symptoms in severe labyrinthine vertigo he thinks is that of Gowers. This author considers that "ocular symptoms, secondary in origin, are present in some instances. In cases of ear disease an increase of pressure within the ear, as by pressing firmly the antitragus over the opening of the meatus, may cause nystagmus. During paroxysms of vertigo the patient may be conscious of a jerky movement of objects, a quick motion in one direction and slow return, like that sometimes produced by nystagmus, and I have known it to correspond with intermitting tinnitus. This apparent movement may sometimes alone be caused by pressure on the meatus; and nystagmus may be produced, with vertigo, by disease of the middle ear,—of course, through the secondary affection of the labyrinth. It has been known to persist after the ear disease was cured, even for ten years. I have several times known double vision to occur during or after a paroxysm; in one case of pure aural vertigo each attack was followed by double vision, jerky movement of objects, and distinct erroneous projection in the direction of the movement, so that if the patient attempted to touch an object the hand went too far in that direction. Slight diplopia is sometimes due to nystagmus that is not quite equal in the two eyes. It is apt to cause an error in diagnosis."—*Montreal Medical Journal*, June, 1897.

The Results of Radical Operations for Hernia.—Professor Kocher has just fired another heavy gun in defense of his operation for the radical cure of hernia. After gracefully acknowledging the value of Bassini's operation in "certain cases" he contends that his own procedure is, as a

rule, to be preferred because the canal is not laid open, so that in the event of suppuration no injury has been inflicted; because his method has been successful even in the hands of inexperienced assistants; and because his statistics are good.

His own results are: 103 hernias (inguinal); primary union in 91.3 per cent., with discharge of patient in 10.7 days, on the average; 8.7 per cent. of delayed union; average duration of hospital treatment, 32.6 days. Recurrence in 3 6 per cent. (4 cases). Mortality, *nil.*

He explains the more favorable results of Coley by pointing out that of 360 cases 250 were in children, who give much better results. In his own reports only 20 out of 198 were less than 15 years old, while 61 were over 40 years old.

In order to avoid absolutely the "funnel" of the sac at the entrance to the canal Kocher now recommends, in the worst cases, invagination of the sac by introducing a curved forceps into the sac from the abdominal side, a small opening above the internal ring being made for that purpose.—*Centralblatt für Chirurgie*, May 15, 1897; *Medicine*, July, 1897.

A Substitute for the Whitehead and American Operations.—David Williams, of Columbus, Ohio, argues that in all cases of extensive varicosity with hypertrophy, where the removal of the lower portion of the rectum by the Whitehead and American operations has been especially recommended, the papillæ, which are found in every normal rectum, and which "orificial" surgeons are taught to remove with as much care as though they were imps of malignity, are centres for nerves of special sense, as are the papillæ circumvallatæ of the tongue and sensory papillæ of the lips, and should be respected even though they do occupy an humble and obscure portion of the body. The instruments necessary for this operation are to be found in every surgeon's armamentarium. They are: a large bivalve rectal speculum; a pair of strong T-forceps with deeply-serrated jaws and free open space between the shanks, an inch or more in length, the T being at least an inch long; long-handled tenaculum straight from the angle to the point; a scalpel; a good needle-holder; plenty of round, full-curved needles; and good catgut.

The patient, having been prepared by a thorough cleansing externally and internally, is completely anæsthetized and placed on the operating-table in a good light. The anus is thoroughly dilated with a speculum, about an inch of the diseased tissue is caught up with the tenaculum, thrust deeply into the mass, and drawn into the jaws of the T-forceps far enough to include the length of tissue which the operator desires to remove, remembering that the part removed is double the length drawn into the forceps. The subsequent steps of the operation are thus described by the author: "Close the forceps tightly. Pass a suture deeply into the tissues close to each end of the T of the forceps, and tie firmly. Pass three or more sutures from above downward, around the T, well beyond the bite of the forceps, leaving the ends long enough to tie easily. Cut off the tissues close to the forceps and tie the sutures. By leaving the ends of the first two sutures long enough for the assistant to hold, the remaining ones are more easily tied.

Then cut the sutures off close. This is repeated around the rectum as necessary, always leaving a half-inch of tissue undisturbed between the bites of the forceps. The line of each incision should be a little above or below its predecessor, thus making a broken line of cicatrices around the rectum, and thereby diminishing the possibilities of stricture, as contraction is most apt to follow a cicatrix.

"Make no effort to remove the whole of the varicosity, for if a third of it is removed the rest will disappear. Preserve as much of the healthy rectum as possible, and do not remove even a single papilla, if it can be avoided, unless it shows disease. Preserve the circumference of the *ampulla analis* as much as possible.

"There is but little loss of blood, even in the worst cases; but, should a "spouter" continue to bleed after the sutures are tied, pass another around it. Blow iodoform into the wounds, pack loosely with iodoform gauze, and keep the patient in bed for from ten days to two weeks. The gauze should be removed in six or eight hours. Should there be any indurated external pile-tumors, they should be snipped off after the other work is done."—*Columbus Medical Journal*, August 3, 1897.

Pregnancy and Prolapsus Uteri.—Esmann (*Hospitalstidende*, p. 593, 1897) describes the pregnancy of a woman who, some years ago, had been operated for prolapsus uteri by ventrofixation of the uterus. During the pregnancy the abdominal wall gave way and a great portion of the womb protruded in a ventral hernia. It could be recognized that the uterus adhered to the annulus of the ventral rupture. The woman was obliged to lie in bed during the last months of pregnancy, but the delivery was without special difficulty. After delivery the uterus contracted well, leaving the sac of the ventral rupture empty.

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GERMANY.

GERMAN GYNÆCOLOGICAL SOCIETY.

Retroflexion and Retroversion.—An important discussion took place upon the reports of Schultze and Olshausen on the above subject, in which much stress was laid on the following points: In virgins the uterus may be retroflexed, or there may be an anteflexion of the retroverted uterus. Most puerperal retroflexions are relapses into a condition existing before the pregnancy. Whether the alleged troubles be due to the displacement or to its complications, the former should be corrected, as even if not at present the cause of trouble it may become so, and a retroverted uterus is more prone to prolapse, etc., if abandoned in its displacement. Pessary treatment should be first tried, and is, except under special circumstances, the best. Elisher condemned pessary treatment, however, and Theilhaber claimed that symptomatic treatment was all that was generally required. Vaginofixation, except by its avowed partisans, was admitted to be undesirable in child-bearing women, but much faith was expressed in ventrofixation, and especially in the Alexander Adams operation.

SCHULTZE, of Jena, defined the terms retroflexion and retroversion as referring to the direction of the corpus uteri only, and said the expression retrodeviation should be abandoned. He referred the etiology of these displacements to: 1. Relaxation of the normal attachments of the uterus, in a large number of cases due to pregnancy; cases by pregnancy, though virginal forms existed, and many cases even after childbed were merely recurrence of a condition existing before it. Other circumstances leading to such relaxation were reabsorption after posterior parametritis, habitual distension of the rectum, and abdominal pressure in the supine position (Küstner). 2. Fixation of the cervix, in a position further forward than normal in the pelvis, by cicatricial contraction. 3. Shortness of the vagina, especially of its anterior wall, from arrested development or senile atrophy. 4. Habitual fullness and overdistension of the

bladder. 5. Gaping vulva, perineal laceration, and some rarer conditions.

Schultze does not think ovarian tumors ever cause retroflexion; a displaced uterus may more probably evoke ovarian disease, and correction of the displacement leads to the disappearance of symptoms of ovarian inflammation.

School-girls should be taught the importance of regularly emptying the bladder, and of proper care during menstruation. In childbed attention should be directed to providing for comfortable defecation and to remedying delayed involution and any defects in the perineum, even when slight.

Palpation, bimanual or simultaneously from vagina and rectum and the abdominal surface, is sufficient for diagnosis, but to detect complication and obstacles to reposition an anæsthetic is generally required. The use of the sound is to be avoided. When the uterus has been replaced without opposition, a properly constructed celluloid pessary should be introduced, and its efficiency ascertained some days afterward. Cold clysters daily and ergot at the menstrual periods will assist in establishing the cure. During preliminary treatment of any complication the uterus should be secured in anteflexion by a tampon below the cervix. Obstacles to reposition are to be distinguished from obstacles to retention; a hollow Thomas pessary may be inserted after the manual separation of the former; the latter require operative interference. If the floor of the pelvis cannot do its work, Schultze prefers operative treatment for the retroflexion also.

Olshausen, of Berlin, who followed, declared that it was only in uncomplicated cases that the symptoms of these displacements could be determined, and that about half such cases gave no symptoms at all, local symptoms being rare, and bladder trouble quite exceptional. The most constant phenomena are sacral pains, headache, gastric pressure, bearing down, diminished capability, depressed spirits, and constipation,—the result, in the first instance, of mechanical impediment, but afterward permanent from intestinal atony. Irregular bleedings are generally due to metritis fungosa, and are not, except in recent puerperal cases, a consequence of the retroflexion. It is, therefore, justifiable to commence the treatment in all cases by curetting the uterus. Purulent cervical catarrh is an accidental complication; retroflexion, at the most, causes only a slight mucous secretion.

Hyperplasia of the uterus is the most important result of flexion; when metritis has existed for a long time with the displacement, neither it nor its results, dysmenorrhœa and sterility, are cured by reposition. After conception the pregnant retroflexed uterus generally replaces itself; rigidity of its own walls or a deeply hollowed sacrum may interfere with its doing so. When the reposition is incomplete, abortion may take place as late as the sixth to eighth month, but more commonly happens in the second or third.

Certain nervous and mental symptoms, including the tenderness at the angle in the posterior wall, the cause of dispareunia and pain at stool, are shown to depend on the displacement by the fact that they disappear on reposition and return on the relapse of the uterus.

Women near the climacteric do not require any treatment; in younger ones interference is necessary, as troubles, even if absent at

first, are to feared later. Pessary treatment is to be tried, as a rule, in case of operation for complicating affections of the adnexa; ventrofixation after separation of the adhesions is to be preferred. The risk of abdominal and vaginal operation is about the same. The Alexander Adams operation, as modified by Kocher, merits more extensive application in mobile retroflexions. In fixed retroflexion, ventrofixation is the best method, it is free from danger and certain of success. The best way is to fasten the cornua uteri to the abdominal walls by the round ligaments with silk-worm gut, but the stitching of an extensive surface of the anterior wall of the uterus to the abdominal wall should be avoided,—this objection does not apply to Leopold's method.

Vaginofixation is allowable for mobile retroflexion if the stitches do not extend more than from 1 to 2 centimetres above the orificium internum. Vaginal operations for the shortening of the sacro-uterine and round ligaments are theoretically correct, but not yet sufficiently proved in practice.

While Küstner has operated in 25 per cent., and Mackenrodt and Dührssen, at all events at one time, operated in 100 per cent. of all cases, Olshausen as yet has only done so in ½ per cent., and he considered a decrease in the number of operations for retroflexion much to be desired.

Duhrssen, of Berlin, in a paper on the vaginal methods, upheld vaginofixation even for fixed retroflexion, and declared that to insure success the stitches should be inserted as high as the level of the insertion of the tubes.

Baumm, of Breslau, also eulogized vaginofixation; though he had had good results with the Alexander Adams operation, he considers the other simple and effective, free from danger and without any injurious results. In eleven cases he had seen subsequent pregnancy with one abortion only; this abortion may have been due to the operation, as the fixation was too high.

Winter, of Berlin, in a paper on the clinical aspect of retroflexion, from examination of 303 women soon after their first confinement, and 90 others under treatment for the displacement, concluded that all the troubles were to be referred to the complications, and that of the latter endometritis, metritis, and perimetritis, at all events, are of independent origin. Dysmenorrhœa, metrorrhagia, sterility and abortion, in the vast majority of cases, are due to complications and not to the displacement.

Theilhaber, of Munich, denied that the so-called symptoms of retroflexion were due to pressure of the displaced organ, venous congestion, or reflex influence. As a rule, their disappearance after correction of the position of the uterus was, at the most, temporary, and might be explained by other factors in the treatment, especially in hospitals (diet, rest, attention to the bowels, or psychical influences). Symptomatic treatment in his hands had given permanently good results, similar to such as were recently reported by Freudenberg from observations on 423 patients in the clinic of Leopold Landau.

In the discussion in these communications Werth, of Kiel, eulogized the Alexander Adams operation, not seeing any improvement in the modification.

Wertheim, of Vienna, referred to two new methods brought forward within the last eighteen months by him,—the vaginal fixation

of the round ligaments, successfully employed in twenty cases by Dührssen, and vaginal shortening of the round ligaments simultaneously proposed by Bode, of Dresden,—and which in twenty-six cases has given excellent mechanical results.

Veit attached little importance to the origin of the symptoms; the retroflexed uterus sometimes gives rise to no symptoms at all, but it may cause trouble and in every case is disposed to further affections or complications. In treatment pessaries are the first method, but operation cannot be abolished because some people are inclined to do them too often. He himself preferred the Alexander Adams operation, in which the principle was the important matter rather than any variation in detail.

Kustner, of Breslau, was pleased at the general acceptation of the belief he stated ten years ago, that most puerperal retroflexions are relapses of a virginal condition. Retroflexion, when uncorrected, is so detrimental to the mechanics of the pelvic organs as easily to lead to prolapse. He deplored the want of faith of the public in pessaries; he found it easier to persuade a woman who had been wearing an inefficient pessary to submit to an operation than to make a fair trial of another pessary. In the laboring class, who can bestow on the instrument neither the proper care nor adequate control, it is necessary to operate oftener after the climacteric. He preferred total extirpation to the Alexander Adams operation.

Martin, of Berlin, referred to his observation that in retroflexion the ovary could preserve its normal position in the fossa obturatoria, as an argument against the displacement being a cause of ovarian tumor. He did not consider adhesions a reason against colpotomy, nor had they ever caused him serious difficulty; but it was of the greatest importance to determine, by previous examination under an anæsthetic, whether one could operate by the vagina or should choose the abdominal way.

Elischer condemned pessary treatment, which rarely did more than make the woman able to work for a time, was much complained of by women and their husbands, and was only proper where a radical cure was out of the question, and even in complicated cases this was the exception. He had now done fourteen cases by his own method (Cbt., No. 10, 1897), and recently examined three done more than a year ago. The women were quite free from trouble, and their uteri mobile in anteflexion.

Leopold, of Dresden, said that he passes two stitches, 0.5 cm. apart, through the wall of the uterine body, removing them on the fifteenth to sixteenth day. In two cases, faultily done, there was trouble in child-birth; in all others the pregnancies were not interfered with, and even after repeated pregnancy the uterus has preserved its position.

Fritsch, of Bonn, had found ventrofixation free from danger and efficient. Like Leopold, he stitches a small portion (10 pfennig gross) of the fundus to the peritoneum and fascia in the lower angle of the abdominal wound with catgut, carefully avoiding the rectus muscle. Vaginofixation he never performed in women who were not past child-bearing. Recently he had preferred the Alexander Adams operation, which, provided no relapse took place, appeared to him to be the best method.

Chrobak, of Vienna, said that pessary treatment could restore all the capability for work, but was technically more difficult, more troublesome, and less profitable than operative methods. He had tried vaginofixation sixteen times and would never do it again. He recommended Olshausen's ventrofixation, or else the shortening of the round ligaments, and strongly condemned the practice of commencing the treatment of every retroflexion by curetting the uterus.

Pfannenstiel, of Breslau, in fifteen cases complicated by prolapse, had performed vaginal shortening of the round ligaments with thoroughly good results; in women not past child-bearing he does this operation; in those who are so, vaginofixation; but the last two years in cases of mobile retroflexion, the Alexander Adams operation.

Neugebauer, of Warsaw, described a prolapse operation of Krajèwski's, of Warsaw, who, after freeing the pyramidalis muscle, passes it through the eye of the needle, with which he transfixes the anterior wall of the uterus from below upward. Two cases were successful.

Olshausen, replying, pointed out that, before Küstner drew from the discussion a confirmation of his idea that most retroflexions dated prior to the first confinement, he must prove that a vast majority of all cases were of puerperal origin. He was very glad that not a single word had been said throughout the discussion upon massage, which could not correct any retroflexion.

Schultze was glad that the discussion showed such agreement with his report and his earlier writings. Correction of the position of the uterus was followed by the disappearance, not only of profuse menstruation, the result of disturbed circulation in the uterus, but also by that of anticipating menstruation, from disturbed circulation in the ovaries.

No operation gave the uterus a position as closely resembling the normal one as the pessary, but it was important to form the pessary to fit the case; the best material was celluloid.

The society is to meet next in Berlin, myoma and puerperal infection being the special subjects for report.—British Gynæcological Journal, Aug., '97.

GREAT BRITAIN AND COLONIES.

The British Medical Association.

Arthritis Deformans.—Dr. James Stewart, of Montreal, stated that this common affection is known under the names of "rheumatoid arthritis," "arthritis deformans," and "osteoarthritis." It often succeeds attacks of acute or subacute rheumatism, and, indeed, follows some of the infectious diseases, especially gonorrhœa. Dr. Stewart had notes of 40 cases; quite a proportion gave a previous history of gonorrhœa. In some cases the exciting cause seems to have been cold and wet,—5 out of 40 cases. In some, worry appeared to be a factor, —15 per cent.

Rheumatoid arthritis bears a considerable resemblance to joint affections in certain organic diseases of the spinal cord, as tabes and syringomyelia, and may be due to some functional or organic affection of the cord. He, however, finds no good ground for the belief that

it is induced by changes in the nervous system. The joint affections of these diseases are, however, not at all identical with rheumatoid arthritis. There is muscular atrophy in rheumatoid arthritis, but it is not like that of anterior sclerosis, and can be explained as a consequence of the malnutrition accompanying the disease. Besides in many cases of chronic deforming arthritis the cord has been examined after death and no palpable lesions found, either in the cord or in the nerves. There is no apparent causal relation between the disease and tuberculosis except that the lowered resistance which attends tuberculosis may be favorable to the arthritic disease.

There is a more probable relationship to acute or subacute rheumatism. In 30 per cent. of all cases the onset was like that of acute or subacute rheumatism. But the difference is in their sequels. True acute or subacute rheumatism gets well without marked joint changes; in rheumatoid arthritis the disease goes on to distinct lesions and deformities of the joints.

Clinical types of the disease are by no means constant, and there is no sharp dividing line between certain cases of chronic rheumatism and the earlier stages of rheumatoid arthritis. There are all grades, from mere stiffness of the affected joints to the formation of new bony tissue and hyperplasia and eburnation of the cartilages.

As to the alleged connection between this disease and infection, it may be said that, as yet, there is no proof of a bacteriological origin. The acute and subacute forms, however, have all the clinical characters of an infectious disease.

Treatment.—This affection is most rebellious to therapeutic measures. In Dr. Stewart's experience, superheated-air baths have done the most good. The Scotch douche, dry heat (rather than moist), is advised.

He had treated twenty cases in the Royal Victoria Hospital by the partial, superheated-air baths; in all the relief of all the symptoms was most marked. There is an increase in the mobility of the joints after a few baths.

Dr. Singleton Smith was inclined to believe in the infectious origin of this disease. The arthritis is due to something besides neuropathic states or tuberculosis or syphilis. The wasting of the muscles is incident to the amyotrophic influence of acute disease. The fact that in so many cases there is a previous history of gonorrhœa gives us a clue which may profitably be followed out.

Dr. Lindsay, of Belfast, said that his experience in the treatment of this disease in England led him still to favor the old view rather than the microbic or neuropathic. He believed that there is a direct relation between rheumatoid arthritis and ordinary rheumatism. He has followed cases where chronic rheumatism has developed into rheumatoid arthritis. The etiology is generally the same: cold, exposure, poverty, privation, errors of diet, etc. But the treatment is somewhat different; the ordinary antirheumatic remedies are not efficacious. He has found no benefit from anything but codliver-oil, tonics, and liberal diet.

Dr. William Osler said that his experience led him to support the neuropathic theory of this disease.

Dr. Jacobi would have been glad had Dr. Stewart defined rheumatism, and told what he meant by rheumatoid arthritis. There is

no disease which we can properly call rheumatism except acute articular rheumatism or rheumatic fever. In rheumatism proper we have to do with the synovial membrane only. In rheumatoid arthritis we have to do with the cartilages and bones. The cartilages are absorbed, there is bony proliferation, there is eburnation. True rheumatic affections have nothing to do with destruction of cartilages. He believes treatment directed against the nervous debility, the constitutional state, does the most good. He especially recommends the treatment by arsenic in increasing doses for months. He has seen some good results from this and from nothing else.

Dr. J. C. Wilson, of Philadelphia, also thought that the term rheumatism should be confined to acute articular rheumatism. As for the affection which is the subject under discussion, it is frequent in elderly people whose nutrition is low after exposure to cold and damp, and it tends to changes in the bones and cartilages, stiffness, and ankylosis. Often it seems to result from a succession of acute attacks, each adding its increment of change to its predecessor. He thinks the behavior of these attacks is like the repullulation of some microbic agency.

Dr. F. C. Shattuck thought that we still knew nothing about the pathogeny of rheumatoid arthritis. It is still the opprobrium of medicine. He has known some cases to appear in connection with a concealed source of suppuration somewhere; and he related an interesting instance where the suppuration had taken place under a plate of teeth and improved under the proper treatment.

Dr. Morehouse, of London, Ontario, still adheres to the rheumatic theory of causation; only in treating the disease he finds that tonics do the most good. Iron, quinine, arsenic, and codliver-oil have, in his practice, been most beneficial.

Dr. Graham, of Toronto, spoke of the points of diagnosis from gout, but thought that we were all in the dark as to the nature of rheumatoid arthritis. We must bear in mind that the diagnostic criteria of rheumatoid arthritis are the osteocartilaginous changes. Clinically it is certainly difficult to differentiate from chronic rheumatism. He does not, however, believe chronic to be identical with acute rheumatism. He has found much benefit from the arsenical treatment, but these patients never get well.

Dr. T. D. Griffiths believes chronic rheumatoid arthritis to be due to a development of certain constitutional conditions, and to be merely a symptom,—just as eczema is a symptom of lowered nutrition, nervous shock, indigestion, gout, etc. It is more like a skin disease due to constitutional causes than an infectious disease, as smallpox or even gonorrhœa. It is not due to a specific poison; the previous state is everything. The treatment is one of the general conditions, supporting tonics, good diet, good hygiene.

Dr. Gibney, of New York, regards the treatment by superheated-air baths and the subsequent forcible correction of the deformities by far the most efficacious. In the acute stages the limb should be confined in a splint. After the exacerbation is past a limited range of motion (within the limits of painlessness) should be permitted.

The president spoke of the subject as a difficult one from an etiological or diagnostic point of view. There is such a variety of joint affections, with such different causal antecedents, classed under

the head of rheumatoid arthritis. It is not rheumatism, it is not gout. He likes the name osteoarthritis; this, moreover, does not commit us to any theory of causation. A leading characteristic of the disease is to develop joint-deformities. Any disease that gets well without changes in the joints we would not call arthritis deformans. He thought the disease one of debility and malnutrition.

The Proper Use of Terms to Denote Myocardial Changes.—Dr. James Tyson, of Philadelphia, would reserve the term "dilatation" as applied to a well-known cardiac condition to such cases as are attended with degeneration of the muscular wall. He would substitute the word distension or expansion for dilatation in purely physiological cases. Instead of "hypertrophy with dilatation" where there is no structural alteration, he would say hypertrophy with distension or hypertrophy with expansion.

The Dietetic Treatment of Diabetics.—Dr. Robert Saundby, of Birmingham, Eng., stated that the usual diabetic diet, with its rigid restrictions, could only be carried out by the doctor's authority and the patient's docility. Compromise was the rule, but arrived at by the doctor's opinion being sacrificed to the exigencies of the patient. Diabetes mellitus was a clinical group, of which the causation and proper classification were still debatable. These, therefore, should not be allowed to rule our views on treatment. Glycosuria was an abnormal phenomenon, but occurred when the amount of carbohydrates ingested exceeds the utilizing capacity of the body. This capacity varied in different individuals, and perhaps in the same individual at different times. Those who become easily glycosuric from slight excess stood in close relation to the milder forms of diabetes. In severe diabetes glycosuria persisted even on flesh diet,—a fact explained by the formation of a carbohydrate molecule when albumin was converted into urea. Hence in severe diabetes there was no physiological ground for persisting with strict diet in the hope of thereby removing the glycosuria. We must look to clinical results for the justification of our treatment, and must not be led too far by our prepossessions in favor of any disputed pathological doctrine. Instead of following a blind routine we should give each case as much carbohydrate as experience showed he could assimilate. Of carbohydrates it was best to give one and a half pints of milk, six ounces of baked potato, one and a half ounces of levulose, and, in mild cases, four and a half ounces of dry toast. Fat bacon should, if possible, form one meal, but diabetes appeared to absorb fat badly. Alcohol, in the absence of albuminuria, might be allowed up to four ounces daily, well diluted with mineral water, or, in mild cases, a bottle of light Moselle or Bordeaux wine, or even a pint of bitter ale. It was of great importance to prescribe definite quantities, and to test the effect of the diet by weekly body weighing, urine measurement, and sugar estimation.

This address gave method of dieting delineated in his book, the main features of which are as rigid an exclusion of carbohydrates as possible without damage to the nutrition and general condition of the patient, the case being very carefully watched. The discussion which followed was of the greatest interest.

Dr. Tyson, of Philadelphia, said that Dr. Saundby's method was

essentially his own. The exclusion of carbohydrates can never be complete, and many patients do better on a diet not too rigid. Cases drop into two classes, the mild and the severe. In mild cases it is easy to eliminate sugar by diet; in the bad cases this cannot be done. The first form may be called glycosuria, the second is true diabetes. Dr. Tyson believes that the mild case if left alone will develop into the grave in time. He aims in the light forms to reduce the quantity of sugar in the urine under 2 per cent.; the patients are then practically well. You can then allow them with safety a certain amount of carbohydrate. Once a month put them on a pure proteid diet for a few days, and the sugar disappears completely; then relax on diet, but not so much as to exceed 2 per cent. of sugar in the urine. In severe cases a rigid diet will not take out the sugar. If you give nothing but pure meat, the urine will still contain sugar in large amounts, and the presence of a large amount of sugar in the urine is harmful. The polyuria is due to sugar, as is the diabetic amblyopia, the furunculosis, etc.

Is a pure proteid diet harmful? Munsen's studies seem to indicate that an exclusive proteid diet increases diacetic acid in the urine. This is responsible for the coma. There are other toxic substances, according to this authority, due to a breaking up of albumin. It is not, however, proved that these toxic substances do not come from the body-albumin instead of the proteids of food.

Dr. Tyson first puts his patient on a rigid proteid diet to see what can be accomplished. Then he adds one article after another containing more or less starch or sugar, watching the urine, and he finally makes the diet as liberal as the individual case will permit.

Dr. Sidney Coupland, of England, said that his experience had been similar to that of Dr. Saundby and that detailed by Dr. Tyson. In some cases marked benefit comes from dieting, in others the benefit is slight or *nil*. In some cases the patient rapidly gets worse after being put on diabetic diet. It is impossible to altogether exclude sugar and starch.

Dr. Singleton Smith, of England, spoke of the diabetes of young people as being peculiarly intractable and fatal. In these patients we cannot allow much latitude of diet. In elderly people we are obliged to give more latitude. In his own practice he tries to carry out a rigid system, determining by experiment how much carbohydrate in each particular case can be assimilated, and making concessions only as circumstances demand.

Dr. Ebenezer Duncan, of Glasgow, Scotland, thought that the matter of sugar in the urine is not the chief factor of prognosis. If the diabetes be pancreatic, neither diet nor anything else will do much good. In nervous diabetes we should restrict the diet, persevering as long as nutrition does not weaken and the patient can digest the diabetic diet. We must not give way to the cravings of our patients. Dr. Jacobi, of New York, has found that some patients will not thrive on any diabetic treatment. Old people often emaciate if you drop their carbohydrates. In the diabetes of young people you must withhold carbohydrates as much as possible. Under a proteid diet young patients live longer.

As to the question of milk, he would say from his experience that he has never seen a patient get worse to whom a moderate amount of

milk was allowed. In fact, they generally improve on milk. He does not believe in Donkin's skim-milk treatment. He gives milk in any form as an adjuvant. Old persons do not do well on a strict diet; they do better on a mixed diet.

Dr. Lindsay, of Belfast, England, also spoke of the necessity of allowing elderly patients much liberty. He gives milk as an adjuvant, —a quart or so a day,—but does not believe in an exclusive milk diet.

Dr. Tyson, of Philadelphia, said that he had had much experience with the exclusive milk treatment. In mild cases it does well; the sugar disappears. But there is no permanent advantage in this, while in severe cases the consequences are disastrous. Milk is safe along with other things. The presence and the amount of sugar in the urine is generally an index of the condition of the patient, but sometimes we have to disregard this as an index of the danger of the patient.

Dr. Wright, of Ottawa, was inclined to look upon glycosuria as distinct from diabetes. The former is the diabetes of elderly people. You cannot much restrict their diet.

Dr. Stephen MacKenzie, the president, said that the paper of Dr. Saundby was a protest against blind routine, counseling a study of the individuality of the patient and the necessity of finding out the limitations and restrictions of diet necessary, the practitioner being guided not so much by the sugar in the urine as by the requirements of the patient. Is the patient improving in nutrition, strength, weight, in respect to thirst and other symptoms, or is he deteriorating? These are questions which the physician should constantly have before him in treating either the mild or the grave cases.

Dr. Saundby said, in closing, that he was far from wishing to leave the impression that he advocated latitude in diet; his point was the reverse of this. He, however, believed in giving his patients a diet that was well tolerated by them and not repugnant. It was necessary to allow a certain amount of carbohydrate. He did not object to potatoes,—four to six ounces a day; the quantity of sugar in the urine is not materially augmented. The sugar seems, to some extent, to be assimilated. We must make the lives of these patients as tolerable as we can. What is the diet which in each case will best maintain nutrition? As to milk, he has for years added it to his dietary. One litre daily may be allowed with safety.

The Treatment of Diabetes by Uranium Nitrate.—Dr. Ebenezer Duncan, of Glasgow, Scotland, stated that this agent was introduced into therapeutics by Dr. West. The reader has found that in doses of 15 to 20 grains three times a day it markedly diminishes sugar in the urine, besides alleviating all the symptoms. He thinks that it stimulates the sugar-consuming cells of the organism. Best in neurogenous diabetes.

Dr. Tyson had tried the remedy twenty years ago. He had derived no benefit from the smaller doses (2 to 5 grains) then used. It frequently disturbed the stomach and caused diarrhœa.

Dr. Saundby said that he had also tried uranium nitrate in small and large doses and had seen no good come from it.—Boston Medical and Surgical Journal, September 9, 1897.

RUSSIA.

INTERNATIONAL MEDICAL CONGRESS.

The High-Altitude Treatment of Tuberculosis.—DR. VON ZIEMSSEN read the first paper of the day. Looking back over the history of tuberculosis, he said, we see a motley conglomeration of methods of treatment, for during the present century almost every year has brought with it a new remedy. All these have now been discarded, and but two agents remain to be considered, namely, tuberculin and climate. In regard to the first, the "specific" treatment, there is little to say. Koch's old tuberculin has been forgotten, the value of the new has not yet been proven, and most people already doubt its efficacy. In speaking of tuberculosis, he said, he meant particularly pulmonary tuberculosis; other forms, such as lupus, have without doubt been cured, but for the pulmonary form, the most frequent and therefore the most serious, nothing really has been done. The complexity of the lesions make a cure by means of a specific seemingly impossible. Other forms have their specifics, for tuberculin will often cure lupus, and iodoform will cure tuberculosis of the joints, but as yet we have no specific for tuberculosis of the lungs. There remains therefore only the climatic treatment. As far back as we can see in the history of medicine fresh air has been one of the requirements in the treatment of tuberculosis, but it is only of late that the advantage of high altitudes, at least for many cases, has been clearly demonstrated. That tuberculous patients can get a quantity of fresh, pure air in these regions is evident to anyone visiting the places. On the mountains in the centre of Europe, mountains covered with snow during the entire winter, one can see patients sitting in the sun drinking their morning coffee, with snow all around them, yet the sunbeams are so warm and pleasant that they are perfectly comfortable. But the fresh air that surrounds them is not all; the altitude brings about an excitation of the blood-making organs that increases the corpuscular elements in the blood. Even in health this reaction takes place, but not so markedly as in diseased states. There are contra-indications to high altitudes which prevent us from sending all patients there. A tuberculous patient with fever should never be sent to a height, for he will certainly become worse and the fever will be increased. Almost always patients without fever do well, though they sometimes find it difficult at first to acclimatize themselves. If the fever is due wholly to the presence of bronchitis or pleurisy, it does not act as a contra-indication.

The best results are obtained when the patient is sent to a place near his own home, for a long journey is always depressing, and the comfort of seeing friends, especially to a sick man, is very great. The stage of the disease must be taken into account in deciding this matter. If the case is much advanced, the patient should be kept as near home as possible.

The speaker took up the subject of sanatorium treatment for the poor. He feared the number of the rich is too few to build sanatoria for all the world, but that should not paralyze all effort, for every case cured and every case isolated are steps toward the conquest of the disease.

Dr. Senator said that his personal experience with tuberculin had not been very extensive. He had tried it carefully in a dozen cases, but without good results. In a few it seemed to moderate somewhat the fever, but in the others it acted as poison. He was convinced that the only treatment of value was the climatic, and he believed high altitudes were often of especial value. He did not believe that good was done by increasing the number of red corpuscles, because he had seen more than one case in which elevation had no visible influence on the corpuscular elements of the blood and yet the patient improved. He agreed with the reader of the paper that the principal contra-indication to high altitudes was fever, for there is great danger in such cases of hæmoptysis. Nevertheless some cases of hæmoptysis without fever (when the hæmorrhages are slight) do well in these regions. He regarded altitude as a factor second only in importance to fresh air. Sunlight is also of great value, and the sun's rays themselves exert a particular influence. Pharyngeal and laryngeal cases do not improve, and in fact always become worse, so that Dr. Senator regarded such complications as a positive contra-indication to the high-altitude treatment of pulmonary tuberculosis.

Dr. von Leyden said that in his hands the specific treatment had failed, and he did not believe there could be any sure success with tuberculin. The specific may come, but we cannot wait for it. We must not look to the future; we are living in the present and must treat in the present. So far the only treatment that has given any positive success, he said, is the climatic. His best results had been obtained in the mountains, but the place and its climate must be selected to suit the individual patient. A patient should not be sent far from home, for the nearer he is to friends the more comfortable and contented he will be and the better, as a rule, will be the results.

Dr. Körnig, of St. Petersburg, said that he had found an increase in the red blood-cells in patients who had gone to high altitudes, and he was inclined to attribute to this increase a large part of the benefit derived from a stay in these mountain sanatoria.

Dr. Dehio, of Dorpat, said that observations of the sanatoria in Russia, for instance Hallila, in Finland, and Lindheim, in Livonia, have shown that the climatic peculiarities of the Russian winters have an effect on tuberculosis very similar to that of high altitudes.

Dr. Jarvein, of St. Petersburg, reported the results of a trial of tuberculin in the clinic of Professor Janowsky, in the military academy at St. Petersburg. It was tried in eight cases, five of which were very mild and in the first stage. They began with 1-500 gramme and increased daily to 1 milligramme. At first the patient showed no reaction to the drug, but when the dose of 1-50 to 1-25 milligramme was reached the temperature began to rise to from 37.8° to 38.5° C. (100° to 101.3° F.) and after two weeks three of the patients began to have hæmorrhages. From this time (after two weeks), five patients began to grow steadily worse, and by the end of two months it became absolutely necessary to stop the use of the tuberculin. The three other cases were complicated with fever. The reaction occurred sooner and the rise of temperature was greater. The last case was that of a physician with tuberculosis of the pharynx. In the beginning he reacted feebly, so that the dose was gradually increased to 3 milli-

grammes. Then appeared some fresh miliary tubercles, the temperature rose quickly to 38° to 39° to 40° C. (100.2-104° F.), and in three months he died with all the symptoms of general miliary tuberculosis. After listening to the greatest authorities in Europe on the treatment of phthisis in sanatoria, the speaker thought that there can be but little doubt left in the minds of those present that this is at present the only mode of treatment; and as to the question of sanatoria for the poor he was sure that there were in Moscow, and all over the world, many rich men who would be willing to give generously for such a purpose if it was properly presented to them on the authority of the International Medical Congress that such was the only method of treatment.

The Climatic Treatment of Tuberculosis.—Dr. Vivant, of Monte Carlo, continued the discussion by the reading of a carefully-prepared paper. The discovery of the tubercle bacillus, he said, has taken nothing from the importance of the climatic treatment of tuberculosis, in particular that of pulmonary tuberculosis, the most difficult to handle. The bacillus of tuberculosis resists alike high and low temperatures, so that there is no climate with absolute immunity. The climates most justly regarded as of value in the treatment of this disease offer a certain number of features in common, viz.: pure air,—that is, oxygen in unlimited quantity; and relative dryness,—that is, absence of fogs, of air charged with moisture, to interrupt the light, heat, and chemical action of the sun's rays. We know the importance of light for animal and vegetable cells, and we recognize that solar light rapidly kills bacteria. Air to be pure ought not to contain dust, especially pathogenic dust; it would be therefore useless to choose a windy place. Pathogenic dust is found especially in the midst of crowded places, and the danger of mixed infection arises; hence a person with pulmonary tuberculosis should especially avoid large cities. The temperature of the air as regards its influence upon the respiratory tract is of little importance; yet there is an advantage on the side of heat, inasmuch as cold climates expose the human organism, especially when feeble, to a variety of serious circulatory troubles included under the general term "colds." The stations on the Riviera, the plains of the deserts, the high-altitude resorts, all offer in different degrees all these active elements in climatic treatment; but the plains and the deserts offer no shelter from the heavy winds, the principal agents of colds and principal disseminators of dust. The Mediterranean resorts offer the advantage over the mountains that, with a superior solar radiation, they are less cold, permitting the patient to live in the open air continually in light, thin clothes, giving the air and light the best chance to exert their favorable therapeutic action.—New York Medical Record, September 11, 1897.

Surgery of the Lungs.—The sittings of the surgical section commenced with a series of papers on the surgery of the lungs, contributed by Professors Tuffier, Macewen, Delageniere, Beck, Coromilas, Doyen, and Fabrikant. The reading of these was followed by a discussion. The main conclusions which were arrived at were:—

1. Pneumotomy is indicated in cases of abscess and of gangrene

of the lung, and also in cases of pulmonary phthisis associated with the development of large tuberculous cavities, in which the distressing symptoms are dependent upon the presence of these cavities. The presence of a large abscess or area of gangrene does not contra-indicate the performance of a surgical operation.

2. *Operation.*—If the intercostal spaces are large over the diseased area, the drainage of the cavity may occasionally be carried out through a simple incision; but usually it is necessary to resect portions of one or more ribs in order to give plenty of room to the operator. When the two layers are not adherent over the diseased portion of the lung, the margins of the incision in the parietal layer should be carefully sutured to the visceral layer before incising the lung-tissue and opening the pathological cavity. In order to avoid hæmorrhage, some advised the use of the thermo-cautery when incising lung-tissue, but the various speakers were not agreed upon this point. When the cavity has been opened, its contents are evacuated, its interior swabbed out with antiseptic sponges, and then the interior is packed with long strips of iodoform gauze. In some cases tubular drainage is advisable.

3. *Prognosis.*—This is best in cases of abscess of the lung, when there are few, if any, secondary abscesses in other parts. In gangrene the best results are obtained in those cases which are associated with pneumonia and putrid bronchitis, while gangrene, due to a bronchiectasis, is much less favorable. In cases of pneumotomy for tuberculous cavities the prognosis is very bad, since in nearly all cases if the patient survives the operation he dies at an early period from the general disease.

Intestinal Surgery.—Frank, of Chicago, described a new contrivance which is intended for use in resection of the intestine. He calls it "A New Absorbable Intestinal Coupler." It consists of two discs of decalcified bone, which are fixed together by a section of a thin India-rubber tube. The principle of the instrument is essentially the same as that of a Murphy button, the elastic tube being used to induce pressure. Sutures are applied to fix the intestine after approximation has been effected. The objections urged against this contrivance are the small lumen of the discs, and the method of inserting it. Its advantages are the absorbable nature of the discs and the small liability of concretions being formed around the non-absorbable piece of rubber tubing.

Splenectomy.—Professor Jonnesco, of Bucharest, contributed an interesting paper on splenectomy, in which he gave a detailed account of twelve case which had been operated upon by himself, with good results in most cases.

Malignant Stricture of Alimentary Canal.—Professor Czerny, of Heidelberg, discussed the treatment of cancerous strictures of the œsophagus, pylorus, and rectum, and gave an account of the results which had been obtained by the different methods of treatment which are adopted by different surgeons.

Van Iterson, of Leyden, considered the treatment of cancerous strictures of the alimentary canal, and gave statistics of his own cases. Out of 16 gastrostomies 12 recovered and 4 died; 20 gastro-enteros-

tomies, 19 recovered and 1 died; of 2 resections of the pylorus, 1 died after 29 days and the other after 16 hours; 1 jejunostomy died after 14 hours; 2 intestinal resections, both recovered; and 10 cases of formation of artificial anus in which 9 recovered and 1 died.

Treatment of Peritonitis.—At the second general meeting, held on August 22d, Professor Senn, of Chicago, read a communication on the "Classification and Surgical Treatment of Acute Peritonitis." (*a*) Acute diffuse septic peritonitis is that form of peritonitis in which death occurs in nearly every case within a few days of the commencement of the affection. It is due to the presence of microbes which pass along the lymphatics, and are almost invariably steptococci. It occurs most commonly as the result of perforating wounds of the abdomen, and occasionally follows a surgical operation. It may be caused by the rupture of an abscess into the peritoneal cavity. When the abdomen is examined after death few changes are visible, since all the material which has been exuded has passed from the peritoneum along the lymphatics. The recorded cases of recovery from this affection, in the opinion of Professor Senn, have been in reality cases of acute suppurative peritonitis, and ought to belong to the next class. (*b*) Acute suppurative peritonitis is a general peritonitis which is associated with the formation of pus in the peritoneal cavity, and in the majority of instances is due to perforation or rupture of some portion of the abdominal alimentary canal, most commonly the vermiform appendix. A certain proportion of these cases recover after an operation, and the prognosis in these cases is much better than in the preceding class. In cases of threatening acute septic peritonitis Senn advises the administration of saline cathartics (mag. sulph., 30 to 60 grains), as he thinks that it tends to avert the onset of the affection. Opium ought not to be given in these cases, since it retards the peristaltic movements of the intestines. Senn thinks that free peristaltic movements of the intestines promote the absorption of septic material by the lymphatics. Opium should be administered in all cases of peritonitis which are due to perforation. Stimulants should be freely given by the mouth or the rectum, and, if they are not readily retained, they should be administered by injection. Early operation is advocated in all cases of acute septic peritonitis, since without this death is certain, whereas a certain proportion of those operated upon recover. Often it is advisable to administer stimulants both before and after operation. The incision may be made in the middle line, or elsewhere, if perforation is suspected, but in every case it should be large enough to allow the ready insertion of the surgeon's hand into the peritoneal cavity. All exudation should be removed from the peritoneum by sponging, irritation with hot (110° F.) sterile solutions, or by turning the patient into the prone or semi-prone position and allowing it to drain out. When the intestines are distended, it is often advisable to make small incisions into them, or to puncture with a needle. The incisions are afterward sewn up. Free drainage (either tubular or capillary) should be established. Usually capillary drainage is the more satisfactory. Senn advises that plain sterilized gauze should be covered with one or two layers of iodoform gauze, so as to avoid the occurrence of iodoform poisoning, a condition which he thinks is very likely to be met with

if nothing but iodoform gauze is used. Drainage should be dispensed with as soon as possible, and should be left off gradually. Senn thinks that before closing the external wound it may be advisable to inject a strong solution of a saline cathartic into the lumen of the intestine through the walls, in order to promote peristalsis and avoid intestinal paresis and distension. He also expressed the opinion that anti-streptococcic serum treatment would probably be a valuable help in the surgical treatment of peritonitis, but did not think that it would ever replace operative measures.

Serum Therapy of Malignant Growths. — Sematzky, of St. Petersburg, gave an account of twenty-two cases of malignant growths which he had treated by serum therapy. All these cases had a negative result. From a consideration of these cases the author affirms that in no case is the treatment of a malignant disease justifiable, since he considers that it is a dangerous method which is liable to be followed by serious complications, such as pyæmia and erysipelas. He thinks that, in all the published cases which have received benefit from serum therapy, error has been made in the diagnosis.

A New Method of Nephrorrhaphy.—Jonnesco, of Bucharest, described a new procedure for the operation of nephrorrhaphy. He makes an ordinary oblique lumbar incision, and exposes the posterior aspect of the organs, all superabundant perinephric fat being removed. Next, the capsule is separated from the entire length of the exposed part of the kidney, and three double sutures are passed, each of which passes through the abdominal wall on one side of the wound, then through the renal capsule and substances, and finally through the abdominal wall in the upper part of the wound, care being taken to take up the periosteum of the twelfth rib, or, when the latter is very short, that of the eleventh. Each double ligature is tied over a roll of gauze, and by this means the margins of the lumbar incision are approximated. Jonnesco claims that this method of operation is not liable to be followed by a recurrence of the affection.—British Medical Journal, September 4, 1897.

Clinical Notes and Therapeutic Suggestions.

Pathogenesis of Obesity.—Dr. P. le Gendre, alluding to the etiology of this affection, stated that heredity, either similar or under the appearance of arthritism, is active among the predisposing causes, as is also sex, women being more liable to suffer than men, in the proportion of two to one. The exciting causes are unsuitable diet, especially the consumption of starchy and saccharine foods; the abuse of alcohol, and, perhaps, the ingestion of any fluids in too large quantity, a sedentary life, and (as was observed after the siege of Paris) a sudden return to comfort after long privation. The speaker then discussed metabolism as it related to the disposition of ingested fat or the formation of fat in the organism from other substances, such as sugar or albumin. The factors which clinical experience has shown us to be active in the production of obesity may be grouped under two heads. The first of these moments are those which offer a resist-

ance to the destruction of fat in the economy by diminishing the supply of oxygen needed for its combustion. Among these are anæmia and chlorosis, hæmorrhages, and a sedentary life. Dyspepsia also acts by lessening the amount of bile and pancreatic juice, and so preventing the subdivision of the fats in the intestine; the fat is thus absorbed in the form of an emulsion, which is much more difficult of oxidation. In the second group we find those causes which increase the production of fat in the economy, either through an increased ingestion of fatty food or by favoring the conversion into fat of sugar. Whether the ingestion of large quantities of water favors obesity has long been a disputed point, but Robin's experiments have shown that water favors that form of obesity which is the result of increased assimilation, but exerts no effect when the increase of fat is due to diminished disassimilation. The action of alcohol is exerted in several ways, the chief of which are by causing dyspepsia and by retarding nutrition. The influence of the nervous system in the causation of obesity is very evident in certain cases, but its mechanism is not very clear.—Medical Record, September 11, 1897.

Oxygen Inhalations in Pneumonia.—Henry M. Fisher, M.D., gives a case which he thinks worth recording, from the fact that it was attended with great prostration from the first. In spite of free stimulation, no marked reaction was noted till the oxygen inhalations had been given almost continuously for forty-eight hours, when a distinct improvement in all the symptoms was observed.—New York Medical Journal, September 11, 1897.

Genital Phenomena of Renal Calculi.—Dr. R. Abrahams, in a study of five cases, states that the presence and approach of calculi is manifested by exaggerated genital disturbances, though not constituting a formidable array of clinical evidence to make them of lasting reference in dealing with renal stones, yet the unusual exhibition of one extremely painful symptom disguising and obscuring the real condition of things should render the subject interesting. The sudden onset of pain and swelling of the testicle or ovary is not present in every case; nor is it always attended by a history of sepsis or traumatism as a *bona fide* expression of stone in the kidney, yet the possibility of occurrence of such a state of things exists. It is not infrequently in genito-urinary clinics that a man comes in complaining of pain in one testicle; on examination the organ is found tender and enlarged, sometimes retracted, with absolutely no known cause to account for it. Salicylate of sodium, or any other remedy that works well in the uric-acid diathesis, is given, and the patient gets better or well in a few days.

Again, whatever was said of the testicle may reasonably be assumed to be true of the ovary. Obscure cases of acute oöphoritis might be due to stone in the kidney, as two cases mentioned illustrate, and it is possible that obscure cases of chronic oöphoritis are due to repeated reflex irritation of the organ as the result of either renal calculi or their sequelæ.—New York Medical Journal, September 11, 1897.

Nitrous Oxide Gas and Oxygen in Minor Gynæcological Operations.—H. Bellamy Gardner argues that a safe anæsthetic agent, which

will rapidly produce unconsciousness with muscular relaxation, and leave behind it no after-effects whatever, is greatly needed at the present time for those minor surgical procedures which are every day becoming more necessary in gynæcological practice. Chloroform has a mortality of at least 1 in 2500 administrations, and leaves the patient unfit to resume her ordinary occupations or be moved from the operating couch for a considerable interval after its inhalation. The A. C. E. mixture shares these disadvantages, though its death-rate is only half that of chloroform, being 1 in 5000 administrations. Ether and gas and ether produce some feeling of malaise and transient mental disturbance, though ether has the great advantage of being quite five times safer than chloroform, with a mortality of less than 1 in 13,000 cases. Nitrous oxide gas has a hardly appreciable mortality *per se*, but the muscular rigidity which is present during the anæsthesia, owing to an underlying asphyxial factor (due to insufficient oxygenation of the blood), even when a few breaths of air are admitted occasionally, renders it unsuitable for examinations of the pelvis or abdomen.

We have, however, of late years been introduced to a portable apparatus invented by Dr. Frederic Hewitt for the purpose of adding small and regulated percentages of oxygen to the nitrous oxide gas.

By this admixture of oxygen, nitrous oxide gas is converted from an "irrespirable" into a "respirable" inhalation for the following reasons:—

Nitrous oxide gas alone has powerful anæsthetic properties, and when absorbed into the blood is carried in loose chemical combination with the hæmoglobin of the red corpuscles. It displaces the oxygen of the hæmoglobin, but itself gives up no oxygen to the tissues, and, after completing the systemic circulation, is exhaled again unchanged as nitrous oxide gas. This physiological phenomenon produces, therefore, after fifteen to twenty-five respirations of the pure gas, a condition of oxygen starvation, with the resulting clinical asphyxial symptoms of irregular breathing, cyanosis, and jactitation.

At this point anæsthesia is complete, not because the patient is somewhat asphyxiated, but because of the potent anæsthetic influence of the gas upon the whole nervous system when carried to it by the blood. The asphyxial symptoms due to oxygen starvation, however, render it necessary to remove the face-piece and allow the patient some breaths of fresh air.

Unfortunately, the concurrent admission of quantities of air sufficient to abolish these asphyxial manifestations and furnish the blood with oxyhæmoglobin, so greatly weakens the anæsthetic inhalation by admitting a large proportion of inert nitrogen (four parts to one of oxygen), that imperfect anæsthesia is the result.

In Dr. Hewitt's apparatus, by the provision of pure oxygen (admitted through small holes from a second India-rubber bag attached to that containing the nitrous oxide) the needful 10 to 15 per cent. of oxygen can be inhaled, while the remaining 85 to 90 per cent. of tidal gas is the pure anæsthetic nitrous oxide.

By the proper management of this mixture a tranquil anæsthesia of several minutes' duration can be obtained with the face-piece continually applied, and the four desirable properties of safety, rapid unconsciousness, muscular relaxation, and freedom from after-effects

are secured for the performance of the surgical procedure and the benefit of the patient.

That nitrous oxide gas and oxygen is a perfectly respirable mixture, and a useful one under many conditions, even for the more severe operations if occasion require, he has abundantly proved at Charing Cross Hospital, where he has maintained anæsthesia in the operating-theatre during the excision of a varicocele lasting fourteen minutes, the incision and thorough scraping of a tubercular abscess in the neck lasting six minutes, the examination of hip-joints lasting several minutes each, the dilatation of urethral strictures by bougies, and in numerous other suitable cases.

Dr. Hewitt has maintained an anæthesia lasting twenty-four minutes, while an extensive exploration of the left hip-joint, which involved four incisions, was being performed.

In gynæcology he has had the opportunity of using this anæsthetic during the procedures described below:—

Illustrative Cases.—1. A lady had a large abscess in the right breast a month after her confinement. She was in fairly good health and was nursing the child at the other breast. The surgeon told me the operation would not be a long one, so I chose gas and oxygen as the anæsthetic. A three-inch incision was made, the whole cavity was thoroughly curetted and swabbed with strong antiseptics; it was subsequently partly sewn up and drained with iodoform gauze. For seven minutes the patient was kept quietly snoring under gas and oxygen, of a good color and perfectly flaccid; she awoke half a minute after removal of the face-piece and apologized for going to sleep in the afternoon. There were no after-effects whatever.

2. A lady who had been married two years suffered from severe dyspareunia, due to an almost imperforate hymen. The surgeon proposed to remove the hymen. I gave gas and oxygen while she lay extended upon the couch, and in about sixty seconds she was drawn down and placed in the lithotomy position, the legs offering no resistance to complete flexion. During the operation, which lasted eight minutes, there was only the very slightest reflex movement of the knees, and after awaking she was able to stand up and help the nurse to fasten her clothing, and stated that she neither remembered nor felt anything, and had no sensation of nausea subsequently.

3. A lady, aged 42, very nervous, pale, and somewhat emaciated, suffering from a localized pelvic collection of ascitic fluid, which required paracentesis and possibly further procedures, was highly alarmed at the idea of any operation, and especially of having ether or chloroform, but submitted readily when told it could be performed under "gas." This was not a protracted operation, but complete abdominal flaccidity was obtained for examination by palpation, which had previously been almost negative in value, owing to tenderness and rigidity. There were no after-effects whatever, and at a subsequent similar operation, six weeks later, the same inhalation was used with equal success.

The patient should be near to the edge of the couch, so that the gas-bags may hang free over the side (any plus pressure in the apparatus being undesirable). The administrator should stand behind her head, the gas-bottles being on the floor a little to his right. It is well, in order to obtain the best results, that the inhalation should be con-

ducted three or four hours after a meal; but unless to suit a particularly appointed hour there need be no abstention from the ordinary meals beforehand. Should the operation turn out to be somewhat prolonged or of rather severer nature than was anticipated, it is a very simple matter for the anæsthetist to supplement the gas and oxygen with ether from Clover's, or any other inhaler, without awaking the patient. After the perusal of the above cases it need hardly be pointed out that we have in this mixture, for certain cases and under certain conditions, a highly valuable addition to the list of anæsthetic agents, and, more important still, one which combines many other advantages with an almost entire immunity from risk to life.—British Gynæcological Journal, August, 1897.

The Choice of the Various Preparations of Digitalis.—H. A. Hare states it has been generally conceded that the infusion and the tincture were capable of producing varying individual effects. It has been supposed that this variation depends upon the relative proportions of the various active principles of digitalis held in solution by the water or alcohol with which the preparation is made, and if it be true that each preparation has an affect of its own it is also undoubtedly true that this is due to the reasons just suggested.

It will be recalled that digitalis contains at least five principles, of which four are physiologically active and the fifth inactive. From these there may be developed other substances by chemical alterations or decomposition, but they probably are not primarily present. Each of these ingredients possesses a physiological action of its own, and each has a solubility of its own. Of the four active constituents, digitaline, digitoxine, and digitaleine act upon the heart-muscle, while digitonine has an entirely different effect,—namely, the power of depressing the vagus nerves centrically and peripherally and the inhibitory ganglia in the heart. The digitaline here referred to is not the digitaline of amorphous form prepared according to the process of Homolle, nor the crystalline digitaline of Nativelle, neither of which is a pure digitaline, but it is the digitaline of Schmiedeberg.

The effect of Schmiedeberg's digitaline upon the heart is that of a powerful stimulant, for under its influence the individual heart-beats become more powerful (four to six times greater than normal) and it simultaneously causes a rise of blood-pressure, first, by increasing the strength of the heart, and, second, by stimulating the centric and peripheral and vasomotor apparatus.

The physiological effects of digitaleine and digitoxine are identical with those of digitaline except that they do not stimulate the vasomotor centre nor the pnuemogastric apparatus, and do not directly raise blood-pressure or slow the heart. In other words, they increase the force of ventricular contraction. The effect of digitonine being to depress the vagus nerves, it will be seen at once that it antagonizes the vagal effect of the digitaline on these fibres and so prevents digitalis from slowing the heart to the extent that would result from the use of digitaline alone. It also depresses the heart-muscle. The proportion of digitonine in digitalis varies, but it is not present in sufficient amount to entirely overcome the inhibitory influence of the digitaline.

If we now turn to a consideration of the solubilities of these

principles we can readily explain the different effects produced by the infusion and tincture or fluid extract. Digitonine is soluble in water, as is digitaleine, but digitaline is only slightly soluble and digitoxine is scarcely soluble in water at all. As a result the use of the infusion in a case of heart disease would not give the patient the same degree of cardiac power as the use of the tincture, for not only would the most powerful stimulant of all to the heart, vasomotor system, and vagi be present in small amount, but in addition the large proportion of digitonine would antidote it.

On the other hand, digitoxine is sparingly soluble in alcohol, while digitaline and digitaleine are readily soluble in it, digitoxine being slightly so. It would seem, therefore, that in the presence of a failing heart and circulation the tincture or the fluid extract are the preparations greatly to be preferred to the infusion, because they contain large amounts of the active stimulant ingredients.

The reason that the infusion acts efficiently in some cases as a diuretic probably depends upon the fact that as it does not contain so much digitaline it is less apt to cause spasm of the renal vessels; but if the heart is feeble and there is renal stasis, the tincture is probably the better preparation to overcome this state, because it both aids the heart and by contracting the renal vessels overcomes the stasis. The use of digitaline is inadvisable unless we are sure that we get that made according to the process of Schmiedeberg, for the other digitalines usually sold are very uncertain. The infusion is far more apt to disorder the stomach than the fluid extract or tincture, because of the irritating digitonine.—Therapeutic Gazette, August 16, 1897.

Death by Lightning.—The effects of lightning as it passes to earth through the body of a man vary within an astonishingly wide range. It sometimes happens that a person is killed outright without any symptoms or sign of injury. It may be that death is preceded by collapse, paralysis, or convulsion; usually there are marks where the current had entered or left the body, or clothes may have been scorched, or hæmorrhages may have occurred, and more than one case has been recorded where boots have been torn off the feet and nails driven out of the soles of the boots. Seldom does it happen that lightning leaves such appalling evidence of its transit as that disclosed at an inquest held at Hulford House, near Guildford, recently. The evidence showed that on the previous Wednesday there had been a single flash of lightning and a clap of thunder, and about half an hour afterward the victim was found lying on his face in a field quite dead. Around him, in a radius of several yards, were his clothes and boots, which had been torn and scattered about in an extraordinary manner. The lightning appears to have struck him on the right side of the head, tearing his cap to pieces and burning his hair off. It then passed inside his collar down the front of his body and both legs into his boots, which were torn to pieces, and then passed into the ground, making a hole about eighteen inches in circumference and three inches deep. His collar was torn to pieces, the front of his shirt was rent into ribbons, the jacket and undervest were literally torn to shreds, and the knickerbockers he was wearing were stripped from him and scattered on the ground. His stockings and gaiters were similarly torn in pieces, and on the boots

the lightning had a remarkable effect. They were burst open, some of the brass eyelet-holes were torn out, nails were forced out, and the soles torn off. The skin had been torn off the chest, and the right leg was torn and blackened; blood was issuing from the mouth and right ear. In connection with this fatality two circumstances of a more or less unusual kind may be noticed. There is, first, the single lightning flash, neither preceded nor followed by others in the neighborhood; and, secondly, the fact that the person who was struck was "in the open." The latter comparatively seldom happens, perhaps because shelter is instinctively and perhaps unwisely sought. Here there was no warning and no time for this, and so, without any neighboring object at hand to subdivide and share the discharge, the latter had only one route to earth,—viz., the body of its victim. The wet or dry condition of the clothes is an important point in such cases. It often happens that in persons exposed to a thunderstorm the clothes are wet, and therefore afford a comparatively easy passage to any electric current. In the case above detailed the clothes were presumably dry, and therefore bad electrical conductors, and the destructive effect of the lightning would be in proportion to the resistance encountered in transit.—Editorial, London Lancet, September 4, 1897.

The Specific Action of Quinine in Malaria.—Dr. E. C. Register contends that the drug is very imperfectly absorbed when given by the stomach, and when the patient has a temperature of over 102 degrees. He says that in cases of continued malarial fever, if distinct and well-marked intermissions of the fever are produced artificially by the use of antipyrin, antifebrin, and phenacetin, the crescentic and ring-shaped bodies will disappear after the administration of quinine, as quickly as the spherical bodies that are found in an ordinary case of intermittent fever. In reference to the belief that the forms of the parasite that inhabit the blood-cells are not acted on by quinine, he believes that it is not erroneous. Besides his own observations, he has been able to collect the opinions of thirty-two authors touching upon this point, and twenty-eight out of the thirty-two believe that the endoglobular or intracorpuscular forms are not, on this account, the cause of an uncontrollable fever, and that its proximity to the blood-cell does not, in any way, protect it from the action of quinine.—Atlanta Medical and Surgical Journal, September, 1897.

Effects of Pyogenic Microbes and Their Toxins.—Dr. Molodovski publishes an account of a series of observations on the comparative effects in ophthalmic operations of infection with a pure culture of staphylococcus pyogenes aureus and with the toxin of this microbe. His experiments were conducted on rabbits, the wounds being infected with two days' old cultures or with toxin obtained by filtration of cultures through a Chamberland filter. In another set of experiments the toxin was introduced into the anterior chamber of an eye that had been operated upon to the amount of 0.2 cubic centimetre. Altogether sixty-five experiments were made. Twenty-four hours after the infection of a wound involving the cornea only, or the cornea and also the lens, by a culture, muco-purulent inflammation developed in the conjunctiva together with purulent iritis. A wound

of a more serious nature naturally produced even more grave complications. Thus, when the lens was extracted without any loss of vitreous, infection with colonies of pyogenic cocci caused purulent inflammation of the iris and choroid, while if the extraction of the lens was accompanied by loss of vitreous the whole of the coats of the eye were involved,—that is to say, panophthalmitis resulted. When the toxin was employed as the infective agent and the operation was confined to wounding the cornea and lens, simple catarrh of the conjunctiva with serous inflammation of the iris and ciliary body with hyperæmia of the anterior portion of the choroid resulted. When the lens was extracted with or without loss of vitreous the serous inflammation involved the choroid. All the wounds infected by the culture became purulent, but those infected with the toxin only healed by first intention. The development of inflammatory signs was slower in the case of cultures than in that of the toxin, but was of much longer duration, continuing, indeed, long after the toxin inflammation had ceased and the wound had cicatrized. When the toxin was introduced into the anterior chamber of an eye that had been operated on it was found that if the lens had only been incised the inflammation set up was not of a serious character, the lesion being cured generally in about a fortnight. If the lens had been extracted without loss of vitreous, capillary inflammation of the iris and ciliary body occurred, with the result in the majority of cases of loss of the eye from formation of connective tissue in the anterior chamber. When the extraction of the lens had been accompanied by loss of vitreous the result was in all cases fatal to the organ from development of connective tissue both in the anterior and in the posterior chamber. A somewhat similar series of 127 experiments has been made by Dr. Solovieff on the comparative effect of cultures of pyogenic microbes and the toxins produced by them on rabbits' eyes that had not been operated on. The conjunctival sac of the rabbit's eye appears to form an excellent culture-medium for these organisms, and when a pure culture of the staphylococcus pyogenes aureus or of a pyogenic streptococcus is introduced into the sac some catarrh is produced, which, however, soon passes off. The toxin of the staphylococcus produces more effect,—acute conjunctivitis lasting for one or two days,—and the toxin of the streptococcus a still more acute form of inflammation with extravasations of blood in the conjunctiva. Both toxins also pass into the cornea, the former producing infiltration of that body together with serous inflammation of the iris, and the latter toxin causing inflammation of the cornea and capillary inflammation of the iris and ciliary body. Inoculation of the cornea either with one of the cultures or with one of the toxins sets up purulent keratitis with hypopyon and cyclitis. Introduction of one of the cultures into the interior chamber produces purulent inflammation of the whole of the coats of the eye with ultimate atrophy of the organ. When the toxins are introduced into the anterior chamber the same results are obtained as when they are used to inoculate the cornea. When the cocci are introduced directly into the posterior chamber violent inflammation is at once set up, which destroys the organ. The toxins introduced into the posterior chamber produce the same effects on the deep structures of the eye as are observed when the cultures are introduced into the anterior chamber. Neither the

microbes nor their toxins when introduced into the vitreous humor appear to penetrate into the substance of the brain or even into the optic nerve, owing probably to the closing of the lymphatic canals by the violence of the inflammatory process, so that, however serious their presence may be for the eye, there does not seem to be much danger to life in such cases by extension of the inflammation to the cerebral membranes or to the brain itself.—London Lancet, September 4, 1897.

The American Pediatric Society is making a collective investigation of infantile scurvy as occurring in North America, and earnestly requests the co-operation of physicians, through their sending of reports of cases, whether these have already been published or not. No case will be used in such a way as to interfere with its subsequent publication by the observer. Blanks containing questions to be filled out will be furnished on application to any one of the committee. A final printed report of the investigation will be sent to those furnishing cases.

[Signed]

J. P. Crozer Griffith, M.D., Chairman, 123 S. 18th St., Phila.
William D. Booker, M.D., 853 Park Ave., Baltimore.
Charles G. Jennings, M.D., 457 Jefferson Ave., Detroit.
Augustus Caillé, M.D., 753 Madison Ave., New York City.
J. Lovett Morse, M.D., 317 Marlboro St., Boston.

Committee.

New Books Received.

The editor acknowledges, with thanks, the receipt of the following books:—

"Reference-book of Practical Therapeutics." Volume ii. By various authors. Edited by Frank P. Foster, M.D. New York: D. Appleton & Co., publishers, 1897.

"Eye-strain in Health and Disease." With Special Reference to the Amelioration or Cure of Chronic Nervous Derangements Without the Aid of Drugs. By Ambrose L. Ranney, A.M., M.D., author of "Lectures on Nervous Diseases," "The Applied Anatomy of the Nervous System," etc.; late Professor of Nervous Diseases in the Medical Department of the University of Vermont and of the Anatomy of the Nervous System in the New York Post-graduate Medical School, etc. Illustrated with 38 wood-cuts. One volume, royal octavo, pages viii-321. Extra cloth, beveled edges, $2.00, net. The F. A. Davis Co., publishers, 1914 and 1916 Cherry Street, Philadelphia; 117 W. Forty-second Street, New York; 9 Lakeside Building, Chicago.

"Diseases of the Ear, Nose, and Throat and Their Accessory Cavities." A Condensed Text-book. Illustrated with 100 Colored Lithographs and 168 Additional Illustrations. By Seth Scott Bishop, M.D., LL.D. Philadelphia, New York, Chicago: The F. A. Davis Co., 1897.

"On Respiration in Singing." Illustrated with Colored Frontispiece and a number of Diagrams in the Text. By Dr. Joal. Translated and edited by R. Norris Wolfenden, M.D. London: F. J. Rebman, 1895.

"Essentials of Refraction and the Diseases of the Eye." Part I. By Edward Jackson, A.M., M.D.

"Essentials of Diseases of the Nose and Throat." Part II. By E. B. Gleason, S.B., M.D. Second edition, revised; 124 illustrations. Philadelphia: W. B. Saunders, 1897.

"Manual of Static Electricity in X-ray and Therapeutic Uses." Illustrated. By S. H. Monell, M.D. New York: William Beverly Harison, 1897.

"On Deafness, Giddiness, and Noises in the Head." Fourth edition. By Edward Woakes, M.D., assisted by Claude Woakes, M.R.C.S., L.R.C.P. London: H. K. Lewis, 1896.

"True to Themselves: A Psychological Study." By Alexander J. C. Skene, M.D., LL.D. London and New York: F. Tennyson Neely, 1897.

"Transactions of the American Microscopical Society." Edited by the Secretary. Volume xviii. Buffalo, N. Y.: A. T. Brown Printing-house, 1896.

"Autoscopy of the Larynx and the Trachea." (Direct Examination Without Mirror.) By Alfred Kirstein, M.D., Berlin. Authorized translation (altered, enlarged, and revised by the author) by Max Thorner, A.M., M.D., Cincinnati, O., Professor of Clinical Laryngology and Otology in the Cincinnati College of Medicine and Surgery; Laryngologist and Aurist to the Cincinnati Hospital, etc. With 12 illustrations. One volume, crown octavo, pages xi-68. Extra cloth, 75 cents, net. The F. A. Davis Co., publishers, 1914 and 1916 Cherry Street, Philadelphia; 117 W. Forty-second Street, New York; 9 Lakeside Building, Chicago.

"Traitement des Fractures par le Massage et la Mobilisation." Avec 66 Gravures le Texte. By le Dr. Just Lucas-Championnière. Paris: Rueff et Cie.

"Les Tractions Rythmees de la Langue Moyen Rationnel et le Plus Puissant de Ranimer la Fonction Respiratoire et la Vie." Deuxieme edition augmentee. By J. V. Laborde. Paris: Felix Alcan, 1897.

"Formulaire Hypodermique." Injections Sous-cutanees d'Huiles medicamenteuses, d'Essences, de Substances minerales, d'Alcaloides. By E. Boisson and J. Mousnier. Bureaux de la Médecine Hypodermique, Sceaux (Seine), 1897.

"Introduction a la Médecine de l'Esprit." Deuxieme edition. By Dr. Maurice de Fleury. Paris: Felix Alcan, 1897.

"De la Toxicite des Alcools." By Dr. Andre Antheaume. Paris: Felix Alcan, 1897.

"Genese et nature de l'Hysterie." Volume i. By Dr. Paul Sollier. Paris: Felix Alcan, 1897.

"Genese et nature de l'Hysterie." Volume ii. By Dr. Paul Sollier. Paris: Felix Alcan, 1897.

"Traite de Thérapeutique Appliquee: Traitement des Maladies des Oreilles." By Albert Robin. Paris: Rueff et Cie., 1897.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de la Peau." Part I. By Albert Robin. Paris: Rueff et Cie., 1897.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de la Peau." Part II. By Albert Robin. Paris: Rueff et Cie., 1897.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de l'Appareil Circulatoire." Part I. By Albert Robin. Paris: Rueff et Cie., 1897.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de l'Appareil Circulatoire." Part II. By Albert Robin. Paris: Rueff et Cie., 1897.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de l'Appareil Respiratoire." Part I. By Albert Robin. Paris: Rueff de Cie., 1896.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de l'Appareil Respiratoire." Part II. By Albert Robin. Paris: Rueff de Cie., 1896.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de l'Appareil Respiratoire." Part III. By Albert Robin. Paris: Rueff de Cie., 1896.

"Traite de Thérapeutique Appliquee: Traitement des Maladies Infectieuses." Part I. By Albert Robin. Paris: Rueff et Cie., 1896.

"Traite de Thérapeutique Applique: Traitement des Maladies Infectieuses (Suite et fin)." Traitement des Maladies du Sang. By Albert Robin. Paris: Rueff et Cie., 1896.

"Traite de Thérapeutique Appliquee: Traitement des Maladies Veneriennes." Traitement des Maladies Causees par les Agents. Paris: Rueff et Cie., 1896.

"Traite de Thérapeutique Appliquee: Traitement des Maladies des Organes Lymphoides." Traitement des Intoxications. By Albert Robin. Paris: Rueff et Cie., 1896.

"Traite de Thérapeutique Appliquee: Traitement des Maladies des Reins." By Albert Robin. Paris: Rueff et Cie., 1895.

"Traite de Thérapeutique Appliquee: Traitement des Maladies de la Nutrition." By Albert Robin. Paris: Rueff et Cie., 1895.

"Petit Compendium Médical." By le Dr. Antonin Bossu. Paris: Felix Alcan.

"Technique de l'Exploration Oculaire. Introduction a l'Etude de l'Ophthalmologie." Avec 213 Figures Dans le Texte. By L. Vignes. Paris: A. Maloine, 1896.

"Anatomie Normale et Pathologique des Fosses Nasales et de leurs Annexes Pneumatiques." Volume i. By E. Zuckerkandl. Translated into French by L. Lichtwitz and P. Garnault. Paris: G. Masson, 1895.

"Anatomie Normale et Pathologique des Fosses Nasales et de leurs Annexes Pneumatiques." Volume ii. By E. Zuckerkandl. Translated into French by L. Lichtwitz and P. Garnault. Paris: G. Masson, 1895.

Monographs Received.

The editor acknowledges, with thanks, the receipt of the following monographs:—

Tuberculosis or Carcinoma (?) of the Stomach; Exploratory Cœliotomy; Subsequent Apparently Complete Cure. By W. W. Keen, M.D., Philadelphia. 1897.

Resection of the Sternum for Tumors, with a Report of Two Cases and a Table of Seventeen Previously Reported Cases. By W. W. Keen, M.D., Philadelphia. 1897.

Facts and Fancies in Our Work. Some Remarks to the Medical Society of the State of New York, January 26, 1897. By Joseph Eastman, M.D., Indianapolis, Ind.

Psychical Hermaphroditism: A Few Notes on Sexual Perversion, with Two Clinical Cases of Sexual Inversion. By William Lee Howard, M.D., Baltimore, Md. 1897.

Alcoholic Maniacal Epilepsy: Transitory Disturbance of Consciousness Mediating Criminal Acts. By William Lee Howard, M.D. 1897.

A Report of a Plastic Operation for Restoring the Lower Lip. By Charles N. Dowd, M.D., New York City. 1897.

Pederasty *vs.* Prostitution: A Few Historic Notes. By William Lee Howard, M.D., Baltimore, Md. 1897.

The Advantages in the Treatment of Syphilis at the Hot Springs of Arkansas. By Eugene Carson Hay, M.D. 1897.

Remarks on Senator Gallinger's "Bill for the Further Prevention of Cruelty to Animals in the District of Columbia." By Matthew Woods, M.D., Philadelphia. 1897.

New Snares for Postnasal and Intranasal Surgical Operations. By J. E. Schadle, M.D., St. Paul, Minn. 1896.

Dr. Paul Paquin's Antitubercle Serum in Tuberculosis. By William Hutson Prioleau, M.D., Summerville, S. C. 1897.

Etiology of Appendicitis: Why is it More Common in the Anglo-Saxon Race? By James S. Chenoweth, M.D., Lousiville, Ky. 1897.

Antiseptic Treatment and the Limitation of Climatic Treatment of Pulmonary Tuberculosis. By E. Fletcher Ingals, M.D., Chicago. 1897.

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Five Cases of Extravagant Chancre. By Alfred E. Diehl, M.D., Buffalo, N. Y. 1897.

Binasal Hemianopsia, with the Report of an Additional Case. By Clarence A. Veasey, M.D., Philadelphia. 1897.

Primary Sarcoma of the Lacrymal Caruncle, with the Report of an Additional Case. By C. A. Veasey, M.D., Philadelphia. 1897.

The Treatment of Complicated Ulcers of the Cornea. By C. A. Veasey, M.D., Philadelphia. 1897.

Apioline in Neurotic Dysmenorrhœa. By D. S. Maddox. M.D., Marion, O. 1897.

Tumeurs Benignes de l'Amygdale. By le Dr. F. Ardenne. 1897.

Weitere Forschungen über das Wesen and die Behandlung des Asthmas. By W. Brügelmann, Inselbad. 1897.

Le meilleur Treatment de la Gale. By le Dr. L. Jullien, Paris. 1897.

Le Traitement Chirurgical de la Surdité et des Bourdonnements. By P. Garnault, Paris. 1897.

Il Timo nella cura del Gozza Esoftalmico e del Gozzo Comune. By Dott. Raffaele Galdi, Salerno. 1897.

La Consommation des Boissons Alcooliques à Roubaix. By le Dr. Alexandre Faidherbe, Roubaix. 1897.

De l'Ouverture Large de la Caisee et de ses Annexes. By Dr. E. J. Moure, Bordeaux. 1897.

De Quelques Progres à Réaliser dans l'Hygiene des Pensionnats. By le Dr. Grellety. 1897.

Notes Médicales sur l'Ancienne Flandre. By le Dr. Alexandre Faidherbe. 1897.

Sopra uno Zaffo Fibrinoso Epiteliale del Retto in una Neonata. Osservazione clinica e ricerche microscopiche. By Dott. Giovanni Berti, Bologna. 1897.

Hypertrophy of the Lingual Tonsil and Its Removal by the Use of the Tonsillotome. By A. J. Brady, L.R.C.S.I., L.R.C.P.I., New South Wales, Australia. 1897.

A New Curette and Evacuator. By E. D. St. Cyr, Jr., M.D., Chicago, Ill. 1897.

Original Methods for Detecting and Measuring Abduction and Adduction of the Thigh. By Phil. Hoffmann, M.D., St. Louis, Mo. 1897.

The Influence of Diseases of the Nares and Pharynx on Aural Affections: A Study of Six Hundred Cases of Middle-Ear Disease. Lewis S. Somers, M.D., Philadelphia. 1897.

Adductor Vocal Paralysis. By Lewis S. Somers, M.D., Philadelphia. 1897.

Tuberculosis of the Tonsils, Pharynx, and Larynx. By Lewis S. Somers, M.D., Philadelphia. 1897.

The Doctrine of the Internal Secretory Activity of Glands in Relation to the Pathological Anatomy of Sundry Morbid Conditions. By J. George Adami, M.D., Montreal, Can. 1897.

Spontaneous Rupture of the Aorta Exclusive of Ruptured Aneurisms, with an Analysis of Fifty Cases. By Delano Ames, A.B., M.D., and W. Guy Townsend, M.D., Baltimore, Md. 1897.

Treatment of Cancer of the Rectum, with a Report of Twenty-five Cases. By W. W. Keen, M.D., Philadelphia, Pa. 1897.

The Hemiplegic State and Its Treatment. By Archibald Church, M.D., Chicago, Ill. 1897.

A Series of Intestinal Preparations. By L. R. Sutherland, M.B., Glasgow. 1897.

Further Report of Cases Treated with Antitubercle Serum. By Paul Paquin, M.D., St. Louis, Mo. 1897.

Results from the Administration of Iron in a Readily Assimilated Form after Gynæcological Operation. By C. A. von Ramdohr, M.D., New York City. 1897.

Medical Education. By Robert Levy, M.D., Denver, Col. 1897.

Direct Autoscopy (Kirstein), with Demonstration. By Robert Levy, M.D., Denver, Col. 1896.

Exaggerated Arytenoid Movement,—Anchylosis of the Crico-arytenoid Articulation. By Robert Levy, M. D., Denver, Col. 1896.

Fatal Hæmorrhage form the Nose and Pharynx from Unusual Cause, with Exhibition of Specimen. By Robert Levy, M.D., Denver, Col. 1897.

Report of Special Committee of the Brooklyn Eye and Ear Hospital on the Abuse of the Clinic. 1897.

A Contribution to the Physiology of Sleep, Based upon Plethysmographic Experiments. By W. H. Howell, Baltimore. 1897.

Antistreptococcic and Antidiphtheritic Serums in Treatment of Cases of Mixed Infection. By F. Spencer Halsey, M.D., New York City. 1897.

Is There Ever a Serious Iritis Without an Involvement of the Ciliary Body or Choroid, or Both? By William Cheatham, M.D., Louisville, Ky. 1897.

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Anæsthetics.....Dr. Buxton, 82 Mortimer St., Cavendish Square, W., London.

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GREAT BRITAIN.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

Case of Hæmophilia with Joint-lesions.—DR. J. E. SHAW gave the history of a case of this kind of unusual interest. The patient had lived beyond the age to which hæmophiliacs usually survive, partly, no doubt, from the skillful treatment he had so often received in hospitals since infancy. Again, the evolution of the present condition of his affected joints had been watched from infancy also. At St. Thomas's Hospital he was supposed to have "white swelling" of the knee. In 1878 the right knee and elbow were aspirated and free blood withdrawn from each joint, and the case then recognized as one of hæmophilia. Now he appears to get very little or no effusion into the joints, but, instead, the curious periarticular lesions, preceded by sensory phenomena, while hæmorrhage from the gums is preceded by motor phenomena also. The affected joints are found by examination to be in a condition similar to that of rheumatoid arthritis. The articular ends of the bones are much enlarged, the cartilages extensively absorbed, and very distinct "lipping" exists at the edges of the articular surfaces. A sciagram of the right elbow-joint showed great enlargement of the head of the radius, some "lipping" at the edge of the sigmoid fossa of the ulna, and thinning of the articular cartilages. Even in recent literature the joints in this disease are imperfectly described, and are said to resemble, more or less closely, tubercular joints. Positive error upon this ground is sometimes made. J. E. Summers, Jr., has reported a case in which an enlarged ankylozed knee, occurring in a boy aged 10 years, was diagnosed as "quiescent tubercular arthritis." The joint was resected, and the patient died in twenty-four hours from uncontrollable hæmorrhage, the operator discovering too late that he was treating an hæmophiliac. Bowlby, in a paper entitled "Some Cases of Joint-disease in Bleeders," gives a true description of the nature of the lesion. Sciagrams were

taken of the knees, also, in this case, but, owing to the inability of the patient to extend his knees, the results were not very clear, yet great enlargement of the condyles and "lipping" were apparent. The external appearance of the lower extremities showed great enlargement of the articular ends of the femora and tibiæ.

A point of importance is that, unlike rheumatoid arthritis, the fingers and toes completely escape implication.

Medicinal treatment probably had little effect. Calcium chloride failed to exert any styptic action, and nuclein administered in the form of thymus-gland did not apparently act as a stimulant to hæmopoiesis, or even leucocytosis. Treatment can hardly be otherwise than unsatisfactory where the pathology is unknown.

The nerve-symptoms preceding the acute attacks in the joints would suggest that these lesions are a form of spinal arthropathy.

The hereditary element in the case reported appears to be defective; but persons in this class of life seldom know much of the medical history of their ascendants, and this case may possibly be as truly hereditary from well-known "bleeder" families.

Senator's oft-quoted case would have justified nephrectomy, had life been placed in actual danger from the hæmorrhage.—Bristol Medico-Chirurgical Journal, September, 1897.

UNITED STATES.

American Medical Association.

Principles Underlying the Serum-diagnosis of Typhoid Fever and the Methods of Its Application.—William H. Welch, of Baltimore, read the following important paper upon this subject: Before the introduction of the Widal method of diagnosis the discovery and subsequent studies of the typhoid bacillus had been comparatively barren of results available to the general practitioner of medicine. In this respect the typhoid bacillus afforded a marked contrast to many other pathogenic micro-organisms, notably the tubercle bacillus, the diphtheria bacillus, and the malarial parasite.

For various reasons improved methods of diagnosis of typhoid fever are most welcome to the practitioner. Inasmuch as the prevalence of this disease is a just reproach to the sanitary conditions of a locality, there has often been a readily explicable, if not creditable, reluctance on the part of some physicians, especially in public institutions, country-towns, and summer resorts, to make the diagnosis of typhoid fever even in clear cases. Moreover, notwithstanding all that has been written on the subject, knowledge of the frequent deviations of typhoid fever from the classical type, amounting, sometimes, to entire absence of all features of this type, can hardly be said to have become sufficiently common property of the medical profession in this country. The differential diagnosis of typhoid fever from certain other diseases, such as acute miliary tuberculosis, tuberculous peritonitis, and meningitis, acute ulcerative endocarditis, and various other septic affections, may, for a time at least, be most difficult or impossible, even to skilled diagnosticians. In children the disease is prone to anomalous manifestations. Since the discovery of the

malarial parasite there is no longer any excuse for confounding typhoid and malarial fevers. A method of positive diagnosis of typhoid fever will elucidate the much-disputed nature of many short and mild febrile diseases and of certain fevers of warm climates, as in the southern part of this country.

Before the introduction of serum-diagnosis numerous attempts had been made to utilize the presence of the typhoid bacillus for purpose of diagnosis. One can obtain with considerable regularity cultures of the typhoid bacillus by hypodermic puncture of the spleen in typhoid patients; but this procedure is not wholly without danger. Anyone who has seen at autopsy a swollen, soft typhoid spleen with its capsule distended to the utmost and ready to burst the moment it is lifted from the body would certainly hesitate to insert even an hypodermic needle into such a spleen during life. Instances are on record in which such puncture of the spleen has given rise to severe intraperitoneal hæmorrhage. Cultures from roseola-spots, suggested by Neuhauss, in 1886, yield uncertain results. Cultures from the blood give positive results in some cases, especially if large amounts be used. Cultures from typhoid stools reveal the presence of the specific bacillus in many cases if the examination be made with sufficient patience and care. The introduction of the Elsner and of the Capaldi nutritive media marks a distinct advance in this method. None of these procedures, however, in their present form affords simple and ready methods of diagnosis in the routine of hospital and private practice.

History.—The Widal method of diagnosis is based on the application of scientific discoveries made before Widal's first publication, June 26, 1896. As a controversy for priority, attended with no little bitterness, has arisen, it may be well to state the main historic facts. Like so many other bacteriological discoveries of practical utility, this one is the outcome of investigations concerning immunity.

In 1889 Charrin and Roger noticed that the bacillus pyocyaneus grows in the form of clumps in the undiluted serum of animals rendered immune from this bacillus, whereas in normal serum it grows with diffuse clouding of the medium. This is the first observation of the property of immune serum to cause agglomeration of specific bacteria.

In 1891 Metchnikoff observed the same phenomenon, together with immobilization of the bacteria in cultures of the vibrio Metchnikovi, and also clumping of the pneumococcus, in their immune sera, and he said: "This fact, presenting a general importance, should be investigated more fully." He did not, however, pursue the investigation, and, as he failed to find the same behavior of the hog-cholera bacillus in its immune serum, he seems to have abandoned the idea first expressed as to the general importance of the phenomenon.

In 1893, Issaeff, in the Pasteur Institute, and in 1895, Washbourn, confirmed Metchnikoff's observation as to the pneumococcus, and in 1894 Issaeff and Ivanoff, in Koch's Institute, made the same observation regarding the vibrio of Ivanoff.

In 1894 Pfeiffer, in conjunction with Issaeff, published his important studies on immunity from Asiatic cholera, in which he showed that cholera spirilla introduced into the peritoneal cavity of immu-

nized guinea-pigs, or introduced together with immune serum into the peritoneal cavity of normal guinea-pigs, quickly lose their motility and break up into small granules. This behavior in the animal body, known as the "Pfeiffer phenomenon," and demonstrated in 1896 by Pfeiffer and Kolle also for typhoid infection, became the subject of investigation by others, which led to the recognition of the importance and general bearings of the agglutinative reaction of specific sera. The Pfeiffer phenomenon is distinct from the agglutinative reaction upon which the method of serum-diagnosis to be here considered is based, and Pfeiffer himself cannot be credited with a clear recognition of the diagnostic importance of the latter reaction before it was made manifest by the work of others. He, however, directed attention to the diagnostic employment of serum with his reaction, and his discoveries formed the basis for the later work of agglutinative reaction and, therefore, they occupy an important position in the history of serum-diagnosis.

In 1895 Bordet, in studying the conditions of production of the Pfeiffer phenomenon outside of the animal body, noted that if a small quantity of immune serum be added to a supension in salt solution or bouillon of cholera spirilla these lose their motility and become agglomerated. The significance of Bordet's observation is that he was the first to dilute the serum. His interest, however, was chiefly in the determination of the conditions causing the disintegration of the spirilla by cholera-serum, and it cannot be said that, at this time, Bordet had a clear perception of the importance and general significance of the agglutinative reaction.

On January 3, 1896, Durham presented to the Royal Society a paper giving the results of investigations in Gruber's laboratory in Vienna. This communication embodies the first thorough and systematic study of the agglutinative and immobilizing properties of immune serum outside of the animal body. In this and the rapidly following papers of Gruber and Durham the real importance and general characters of this reaction with immune serum were, for the first time, made clear. The macroscopical and the microscopical tests, the importance of dilutions, quantitative estimations of agglutinative power, the value of the test for the differentiation of bacterial species and for the determination of a previous attack of cholera or typhoid fever, and many other details were described.

It seems but a small step to determine whether a reaction which had been demonstrated to characterize the serum of animals and human beings which have recovered from an injection may not also be present during the period of infection, but upon this step depended the applicability of the reaction as a method of clinical diagnosis. It was Widal who took it and thereby made available for the diagnosis of an infection a reaction which had previously been thoroughly worked out by Gruber and his collaborators so far as immune serum is concerned. Widal's first communication was presented to the Société Médicale des Hôpitaux, on June 26, 1896. This paper has been followed by numerous important contributions by Widal and others to the same subject.

Nature of the Agglutinative Property and Reaction.—As the result of infection with many bacteria or of intoxication with their products,

the blood, even when highly diluted, acquires the property of causing loss of motility and clumping together of the specific bacteria concerned in the infection or intoxication. The clumping is called by Gruber agglutination, and is attributed by him to the presence of substances to which he has given the name "agglutinins." He supposes that these agglutinins make the gelatinous capsules of the bacteria swell up and thereby stick the bacteria together. Although there is no proof of this theory, the names "agglutination," to designate the phenomenon, and "agglutinins," for the supposed substances causing it, have been widely adopted.

In the case of motile living bacteria two phenomena characterize the complete reaction,—paralysis, or immobilization, of the bacteria and clumping. Usually these two phenomena go hand in hand, but sometimes there is loss of motility with little clumping or clumping without much cessation of motion; so that the opinion has been expressed that the paralyzing and the agglutinative substances are not identical. The more common deviation from the usual course of the reaction is the occurrence of clumping, with partial preservation of motility.

The agglutinative serum-reaction appears to be of wide, although not universal, application, both for motile and non-motile pathogenic bacteria, having been demonstrated for typhoid, Asiatic cholera, pneumococcus-infection, tetanus, pyocyaneus disease, hog cholera, Malta fever, colon infection, proteus infection, psittacosis, glanders, and several other infections.

The change in the blood upon which the reaction depends is doubtless a specific one in the same sense as are the antitoxic, lysogenic, and other specific alterations caused by the action of definite bacteria or their products. It is upon this specificity that the diagnostic value of the reaction is based. It is true that, as in the case of the antitoxic, lysogenic, and other protective modifications of the fluids of the body, the normal blood may possess, in some degree, the same property; so that the specific character of the change may not be apparent without resorting to considerable dilution of the blood or serum. Normal blood may agglutinate, to some degree, not only the typhoid bacillus, but various other bacteria. The specificity of this change resulting from infection with a given micro-organism is made apparent by increase of the agglutinative power of the serum only for that micro-organism, or to some extent also for closely allied micro-organisms. The increase of reaction in some degree with closely allied bacteria does not militate against the specificity of the change, for it is only an expression of the natural affinities between varieties and traces of organisms, as between the typhoid bacillus and the bacillus of psittacosis, or between the cholera spirillum and certain other spirilla, or between the varieties of proteus bacilli or of colon bacilli. The development of the specific agglutinative properties of the blood in typhoid fever affords additional proof, if any were needed, that the bacillus typhosus is the specific cause of this disease.

The blood acquires the specific agglutinative power at a variable period, usually within a few days, after the entrance of the pathogenic micro-organism or its products. This power tends to increase, but with much irregularity, during the course of the infection, and gradu-

ally to diminish and finally to disappear weeks, months, or, it may be, years after recovery from the infection. Widal lays much emphasis on the reaction being one of infection and not of immunity. Still it is to be noted that, by following procedures for raising experimental immunity to great heights, there may be a corresponding rise of agglutinative power, whereby degrees of this power may be attained which are entirely unknown during natural infections. Thus, Widal, by successive inoculations of an ass, has secured typhoid serum with an agglutinative strength of 1 to 43,000, and Salimbeni has obtained, experimentally, cholera-serum agglutinating in a dilution of 1 to 50,000. Gruber speaks even of immune sera which agglutinated distinctly in a dilution of 1 to 500,000. There is, however, no necessary correspondence between the height of immunity and that of agglutination; especially may the latter lessen or disappear when the former is preserved. In the light of the experimental results, and for other reasons, it seems to the author somewhat misleading to designate the reaction as merely one of the period of infection.

We are not informed as to the nature of the relationship between the agglutinative and the protective properties of the blood. Gruber has based a new theory of immunity on the agglutinative reaction, but this theory is opposed by many facts and cannot be accepted. The agglutinative property has been shown to be distinct from the bactericidal, lysogenic, antitoxic, and other known protective properties of the blood. At present we have no satisfactory evidence that the agglutinative reaction is concerned in any of the defensive mechanisms of the body. According to Salimbeni, whose results, however, are not in entire accord with those of Durham, agglutination of bacteria does not take place within the animal body, although it has been demonstrated that the living blood-plasma possesses the agglutinative property.

We do not know the origin or nature of the so-called specific agglutinating substance, save that in some way it results from the activities of bacteria or their products within the living body. Gruber believes that it is derived from the bodies of the bacteria through the agency of the cells. Bordet considers that it is secreted by leucocytes. Experiments of Widal and Sicard, and of Achard and Bensaude, indicate that it is not secreted by leucocytes outside of the living body, but there is nothing which shows that it may not be formed by cells within the body.

The agglutinative substance is generally believed to be a proteid, as it is precipitated from blood-plasma with fibrinogen and globulin, and from milk with lactoglobulin and casein, but it is possible that it is simply mechanically retained by these albuminous precipitates. In typhoid fever it may be absent from albuminous urine and may be present in urine which gives no reaction for albumin (Widal). It behaves like an albuminous substance as regards filtration and dialysis.

The question whether it is strictly proper to speak of agglutinative, bacteriolytic, antitoxic substances in the blood is a legitimate one. They have never been isolated as chemical substances. Behring has expressed the opinion that isolation of antitoxin will never be accomplished, for, in his opinion, it is a force pertaining to highly-organized material, and there is no more possibility of separating it

as a substance than of isolating the magnetic force from an iron magnet. In all probability these various properties, agglutinative, bacteriolytic, antitoxic, belong to the same general category, and we may look upon the agglutinative property also as a physical one which proteid substance may acquire as the result of the activities of bacteria or their products, and no more separable in the form of a chemical substance than is electricity.

The agglutinative property is quite resistant to injurious agencies. It survives desiccation of the blood or serum for months, and may persist for months in blood-serum, even when this is seriously contaminated with micro-organisms. It is not destroyed by sunlight, unless overheated. It is weakened by prolonged heat at 60° C. and is annulled by heating for ten minutes at from 75° to 80° C.

The agglutinative property in typhoid fever is present in a maximum amount in the blood, being somewhat greater in the blood-plasma than in the blood-serum. It is found in blister-serum in essentially the same strength as in blood-serum. In other fluids, as the pleural, peritoneal, pericardial, inflammatory, and œdematous, it is in smaller and variable amount. In milk and colostrum it is present in marked degree. It is weak and inconstant in the urine, bile, and aqueous humor. It has been found in tears naturally secreted, but is said to be absent from those provoked by irritants. It may be present in typhoid stools (Block). It has not been found in the cerbro-spinal fluid or the fluid in the seminal vesicles. It has not been positively determined whether the distribution of the agglutinative property in the various humors of the body outside of the blood can be explained wholly by processes of filtration and diffusion from the blood-plasma, although these are doubtless the main factors.

The agglutinative reaction may or may not be obtained with the blood of a fœtus or newborn infant of a mother with typhoid fever. Chambrelent and Saint-Philippe consider that the presence or absence of the reaction in the fœtus depends on whether or not the typhoid bacilli breaks through the placental barrier from mother to fœtus and cause infection of the latter. Further investigations are needed to determine this point and thus to decide whether the agglutinative property is passively or actively acquired by the fœtus. For it has been shown that this property, like immunity, not only may be actively acquired as the result of infection or intoxication, but may be passively transmitted by injection of agglutinative serum, the reaction in the latter case appearing promptly without symptoms of infection, being relatively slight, and disappearing after a short time.

Courmont thinks that the development of typhoid bacilli in a fluid robs it of agglutinative power. Thus he has found that the vegetation of the bacilli in typhoid serum deprives it, in a few days, of the agglutinative property, and that blood obtained, post-mortem, from the spleen, liver, and mesenteric glands, organs in which the typhoid bacilli are especially abundant, is poorer in agglutinative power than that from other parts. Ménétrier found, in a case of typhoid fever, that the pleural exudate, which usually gives the agglutinative reaction, did not do so, and that it contained typhoid bacilli in large number. It has been suggested that these observations may shed light on the exceptional cases of typhoid fever with absence of

the specific serum-reaction. Flexner has shown that, occasionally, the typhoid bacilli develop in the blood in such large numbers as to produce a genuine typhoid septicæmia. Still, these observations, interesting as they are and deserving further investigation, must be interpreted with caution, for Widal has found a purulent exudate from an immunized ass, swarming with typhoid bacilli, to present, even after fifteen months' preservation, an agglutinative power of 1 to 13,000, the power of the blood-serum of the same animal kept for the same length of time being 1 to 14,000.

We have no satisfactory explanation of the production of the phenomenon of agglutination by specific serum. Gruber's explanation, already mentioned, has received no confirmation. The phenomenon occurs with non-motile as well as with motile bacteria, with dead as well as with living organisms. Typhoid bacilli killed by formol in weak solution, or by heating for five minutes at a temperature of 56° C., are about as sensitive to the reaction as are living bacteria, and retain their agglutinability for a long period (Widal). The phenomenon, therefore, is a physical rather than a vital one, although probably dependent, in some way, on the protoplasmic constitution of the bacterial cell. Salimbeni, as has been stated, found that the phenomenon does not occur in the living body of immunized animals.

He also found that the presence of atmospheric air greatly favors the reaction, it requiring much more concentrated serum and a longer time to bring about the phenomenon in a vacuum than when the fluid is exposed to the air. Widal has shown that other physical conditions, particularly contact with objects, such as the surface of slide or cover-glass, and partial evaporation, favor the production of the reaction.

Agglutinative serum is often likewise bactericidal and bacteriolytic, but the agglutinative reaction is independent of the bactericidal and is manifest with dilutions of the serum which annul the bactericidal power. In such dilutions the agglutinated and immobilized bacteria are not altered morphologically, or in staining properties, or in pathogenic power, or in any other way, so far as has been determined. Whether the temporary inhibition of bacterial growth in agglutinative serum is dependent on the agglutinative or on some other property of the serum is not known.

Methods of Making the Serum-test for Typhoid Fever.—Widal, in his first communication, described both the slow, or macroscopical, and the quick, or microscopical, methods. For each of these he recommended a dilution of one part of blood, or blood-serum, to ten parts of the fluid containing the culture. The macroscopical method consists in adding the blood or serum to be tested either to a young bouillon culture of the typhoid bacillus or to sterile bouillon which is then at once inoculated with the bacillus. In the former case the reaction with typhoid serum appears usually within two or three hours and consists in clarification of the previously turbid fluid, and the formation of a clumpy sediment composed of accumulated bacilli. In the latter case the tube is placed in the incubator, and within fifteen hours the reaction is manifested by growth of the bacilli in the

form of a sediment at the bottom of the tube, the fluid remaining nearly or quite clear.

The microscopical test, to which Widal gave the preference, is made by mixing the blood or serum with a young bouillon-culture or with a suspension in bouillon or salt solution of a fresh growth of the typhoid bacillus and examining a drop or two of the mixture at once under the microscope. With a dilution of 1 to 10 this microscopical typhoid reaction appears, as a rule, immediately or within a few minutes, and is evidenced by loss of motility and by clumping of the bacilli into masses of various sizes and shapes.

Widal obtained the blood either with a sterilized hypodermic syringe from a vein of the arm or by pricking the finger. It may also be conveniently obtained by pricking the lobule of the ear. A few drops of blood suffice for collecting the necessary amount of serum; indeed a single drop will do for the reaction. The blood may be collected in a small test-tube where, usually in a few minutes, it clots. The separation of the serum may be facilitated by passing a sterilized platinum needle between the glass and the clot, or by the centrifuge, or the blood may be collected and allowed to clot in a slanted tube, which is then placed upright, the separated serum trickling to the bottom.

In a communication made on July 31, 1896, Widal said that results equaling those with blood-serum can be obtained with blister-serum, and this procedure has been employed with much satisfaction by the Health Department of New York City.

At the same time Widal called attention to the preservation of the agglutinative property in dried blood and serum. Wyatt Johnston deserves the credit of developing the test with dried blood and for introducing the method of serum-diagnosis into the work of the municipal laboratories. The dried-blood method, which has been used far more extensively in Canada and this country than in Europe, possesses certain manifest advantages, especially ease of collection, freedom from subsequent contamination, and readiness of transportation, and it has given excellent results in the hands of Johnston and others. The principal objection, and this is of considerable importance when precise results are desired, is the difficulty of obtaining accurate quantitative dilutions with the use of dried blood.

Several observers, including Breuer, Haedke, Du Mesnil de Rochemont, and Scheffer, have expressed the opinion that the macroscopical method is more trustworthy than the microscope. This the author believes to be an error and to be due to unfamiliarity with all of the conditions essential for the accurate employment of the microscopical test. The latter is more delicate, prompt, and precise than the macroscopical reaction, and requires less care in respect to accidental contamination.

A year's experience with the method of serum-diagnosis of typhoid fever has led to a general consensus of opinion as to its great value. It has, however, been recognized that certain precautions in the application of the test are necessary in order to avoid mistakes. Numerous modifications of the original methods have been suggested, the most important relating to quantitative determinations. In considering the value and practical utility of such modifications of the

test, several points should be borne in mind. Practically all of the methods recommended by competent investigators have given good results in the great majority of cases. For clinical purposes it is desirable that neither the method of obtaining and collecting the blood nor that of conducting the test should be more difficult and complicated than is absolutely necessary. Methods which may be essential for exact scientific work, where every possible source of fallacy is to be avoided, may not be the best for the routine examinations of a clinical or a municipal laboratory. Where absolute accuracy is not obtainable it is, upon the whole, better that the method should err on the side of now and then including a non-typhoid case than in excluding cases of genuine typhoid fever. With due allowance for such considerations as these, we must welcome all efforts to give greater precision to the methods of serum-diagnosis and to determine the capabilities of these methods and their possible sources of error. In exact quantitative work with the serum-test the most important points to be considered are the characters of the culture, the dilution of the serum, the time-limits, the criteria of the reaction, and certain physical conditions influencing the reaction.

Characters of the Culture.—There has been considerable difference of opinion as to whether cultures of the typhoid bacillus obtained from different sources are equally sensitive to the agglutinative reaction. Widal, Durham, Stern, and C. Fraenkel, who have all had large experience with different cultures, have found only unimportant and inconstant differences in susceptibility to the reaction. The fact determined by Pfeiffer that, the less virulent the culture, the greater the sensitiveness to the lysogenic reaction (Pfeiffer's phenomenon), seems to have been considered by many, without sufficient investigation, to be equally applicable to the agglutinative reaction. Kolle, without, however, presenting sufficient evidence, emphasizes the greater susceptibility of cultures with weakened virulence to agglutination. The most satisfactory evidence on this point is furnished by Kühnau, who made a careful comparative study of the behavior with the serum-test of a non-virulent and a virulent typhoid culture, and found the former to react much more intensely with normal and typhoid sera. He, therefore, lays stress on consideration of the virulence of the culture in quantitative work with the serum-test. In view of the conflict of opinion further investigations upon this question are needed.

It cannot be doubted that several observers have had to do with typhoid cultures which presented distinct differences in susceptibility to the agglutinative reaction. Especially worthy of consideration, although not wholly in accordance with some results of others, are the observations of Johnston and McTaggart, confirmed by Appel and Thornbury, that solutions of dried blood are more potent than serum in agglutinative power, although not in paralytic effect, and that such solutions from non-typhoid cases are prone to give partial (pseudo-) reactions with frequently transplanted typhoid cultures, whereas this difficulty is largely overcome by using fresh cultures planted from stock cultures a month old. Hence they strongly recommend for the dried-blood method cultures of the latter character. They, as well as other writers, likewise emphasize the importance of considering the

composition of the culture-medium, which should be favorable to vigorous growth and not too strongly alkaline.

Only young cultures should be used, preferably not over twelve to eighteen hours old, if grown in the incubator. Older room-cultures can be used. Old cultures agglutinate more readily than young ones. Either bouillon-cultures or suspensions in bouillon from solid cultures may be employed. There is no difficulty in securing uniform suspensions of isolated, actively motile typhoid bacilli, especially from young cultures on dried-out agar. In every case it is of prime importance to make a control-examination of a drop from the same part of the culture or suspension which is used for the test and at the time of making the test, in order to be sure that there are no pre-existing clumps, that the bacilli are actively motile, and that the culture is not contaminated.

Stern suggested that the concentration of the suspension—that is, the number of bacilli in it—may be a factor meriting consideration, and Kühnau and Block have shown that this is the case. Weak suspensions are more readily agglutinated and paralyzed than stronger ones. Hence, Kühnau recommends the use of suspensions of known concentration, which can be approximately secured without much difficulty. He uses a suspension in bouillon of a fifteen-hour virulent agar-culture (grown in the incubator) containing about one hundred and twenty million bacteria in a cubic centimetre.

Dilution of the Serum.—Inasmuch as normal and non-typhoid blood may possess distinct agglutinative property, especial importance is attached to the dilution of the serum, in order to avoid mistaking the normal reaction for one of typhoid fever. The opinion has been widely expressed that the dilution recommended by Widal, 1 to 10, is too low, and that a dilution should be used which is not known ever to give a reaction with non-typhoid blood. The fixation of the upper limit of such a dilution has been placed gradually higher and higher, thus by du Mesnil at 1 to 25, by Kolle 1 to 30, by Grünbaum 1 to 33, by Stern 1 to 40, by Kühnau 1 to 50. Even if it should be admitted that a reaction in non-typhoid cases with these higher dilutions is ever of such a character as might mislead an experienced observer, its occurrence is, according to most observers, very exceptional.

The question arises whether the adoption of a dilution of, say, 1 to 50 as the standard, would result in the exclusion of genuine typhoid cases from the diagnosis. Widal divides the typhoid cases in which he has measured the agglutinative power of the blood into five groups: (*a*) those with very weak power,—less than 1 to 100 (four cases); (*b*) with weak power,—between 1 to 100 and 1 to 200 (nine cases); (*c*) with medium or average power,—from 1 to 200 to 1 to 500 (eight cases); (*d*) with high power,—from 1 to 500 to 1 to 2000 (nine cases); and (*e*) with very intense power,—exceeding 1 to 5000 (three cases). In only one case did the agglutinative power not rise over 1 to 40, it being 1 to 30 on the twentieth, and 1 to 40 on the twenty-second day of the disease. In one case Widal found the strength to be 1 to 12,000. In nineteen cases measured by Stern the agglutinating strength was never less than 1 to 50. C. Frænkel found the average to lie between 1 to 100 and 1 to 200, sometimes reaching 1 to 5000.

Out of seven cases Kühnau found two in which the serum was active only in dilutions less than 1 to 50, it being 1 to 30 in one, and 1 to 20 in the other case, but in both he made a positive diagnosis of typhoid fever in consequence of disparity of the action of the serum on the colon bacillus and the typhoid bacillus. From the observations thus far reported, although they are insufficient in number for definite conclusions, there would seem to be only small liability of failure to recognize genuine typhoid cases by resorting to dilutions of 1 to 40 or 1 to 50, but unquestionably a few cases would escape recognition, and for this reason lower dilutions should also be used, and if those between 1 to 10 and 1 to 50 give decided reaction there should be, at least, suspicion of typhoid fever.

It is not, therefore, to be recommended that one should make the test with only high dilution, such as 1 to 50. The negative result of a preliminary test with equal parts serum and culture suffices to exclude typhoid reaction. The examination, if positive, may then be made with a low dilution of the serum, and for this Widal's recommendation of 1 to 10 or 1 to 15 may be well adopted. If with this dilution the microscopical reaction is complete and almost immediate, as is often the case, there is practically no risk in making a positive diagnosis. But for absolute certainty and, above all, in cases where the result of the reaction is not prompt, complete, and unmistakable, higher dilutions should be employed; if the amount of serum permits only one such, it may be 1 to 50, but preferably intermediate dilutions should also be made, and it is desirable, if not absolutely necessary, to try dilutions higher than 1 to 50. For making the dilutions there are various simple technical procedures, which involve but little expenditure of time and labor and only small quantities of serum, as, for example, that recommended by C. Frænkel. An accurate fixation of the upper limit of agglutinative power is often tedious and not generally necessary in diagnostic work. A positive diagnosis of typhoid fever based exclusively on the test with a low dilution, in a case which subsequently proves not to be typhoid should not be considered as in any way invalidating the results of an accurate employment of the method of serum-diagnosis.

It is self-evident that the employment of varying degrees of dilution of the serum, without, at the same time, taking into consideration other factors which influence the reaction, has little sense and does not constitute, in itself alone, an accurate method of mensuration of agglutinative power.

Time-limits.—As the rapidity with which the reaction appears and progresses generally varies, other things being equal, according to the agglutinative strength of the blood, it is evident that methods of exact mensuration of the strength must take into consideration the length of time required for the development of the reaction after the addition of the serum. Many writers have not paid much attention to this point. Stern has proposed that a limit of two hours be adopted as an arbitrary standard for the microscopical reaction, and Widal has accepted this proposal. With this unit, an agglutinative power fixed at 1 to 500 means that 1 part of serum added to 500 parts of the fluid containing the culture agglutinates and paralyzes the bacilli within two hours, although a higher dilution may give a de-

cided reaction in six or eight hours. The optimum effect is, according to Stern, not attained before the lapse of six or eight hours.

By varying the time-limit, results obtained by lower dilutions may be roughly comparable with those by higher dilutions. Thus, for diagnostic purposes, a fifteen-minute time-limit for dilutions of 1 to 10 may be adopted and a two-hour time-limit for dilutions of 1 to 50 or higher; but it should be understood that in all doubtful cases quantitative determinations by varying the dilution should be employed.

Criteria of the Reaction.—Some writers have proposed to make either the cessation of motility or the clumping the essential criterion of the reaction. Thus Stern selects the clumping and Kühnau the paralysis of motion. In the author's judgment, both phenomena enter equally into the reaction and deserve equal consideration; so that a reaction is not to be considered complete and satisfactory unless the bacilli are both clumped and rendered immobile. Partial reactions in which one or the other characteristic is lacking may warrant suspicion and lead to further examination, but they should not be made the basis of positive diagnosis. For this reason the use of killed cultures, as suggested by Widal, while it may have a limited field of application, cannot supplant the ordinary method. As already stated, the microscopical reaction is to be preferred to either of the macroscopical methods, although the latter afford striking objects for demonstration. With low dilutions bactericidal and lysogenic phenomena are common, but they do not pertain to the agglutinative reaction itself.

Certain Physical Conditions Influencing the Reaction.—As already mentioned, Salimbeni has shown that free exposure to the air favors the reaction, and Widal has pointed out that partial evaporation at the edge of the cover-glass and contact of the specimen with slide and cover-glass are also favoring conditions. Hence, the conditions for the reaction are not exactly the same with the serum-bouillon mixture in thin layer beneath the cover-glass on an ordinary slide, as in a thick layer, or in a sealed drop-culture on a hollow slide, or in a column of fluid in a test-tube, or in a moist chamber. The presence of fibrinous masses, granules, and material foreign to blood-serum may, perhaps, explain, in part, the greater frequency of partial reactions with normal blood when the dried-blood method is used than when the serum-method is employed. The temperature of the incubator, by favoring evaporation and in other ways, accelerates the reaction. For exact quantitative work these various physical conditions need consideration and further investigation. Widal prefers the use of ordinary slides to that of hollow ground slides, and does not advise keeping the specimen in the incubator. It is not to be supposed that the diagnostic use of the serum-test generally hinges on such delicate points as these, but they are among the points to be considered in the explanation of certain irregularities in the results of the test, in comparing the results of different workers, and in mensuration of agglutinative power, especially with high dilutions.

Reactions with the Colon Bacillus.—Statements of different writers as to the occurrence of the agglutination of the colon bacillus with normal and typhoid sera are not harmonious. Widal and Cour-

mont find that all human sera, whether normal or typhoid, have a slight agglutinating action on the colon bacillus in dilution of 1 to 10, whereas normal sera have only exceptionally any such action on the typhoid bacillus in this dilution. Many observers have noted some agglutination of colon bacilli with typhoid serum, although the reaction is much less intense than with the typhoid bacillus.

Vedel found, in a case with symptoms of typhoid fever but without the typhoid-serum reaction, marked colon reaction, and he interpreted the case as one of colon infection simulating typhoid. He is not, however, inclined to attach much diagnostic importance to the colon reaction, as he found that it might be well marked both with normal and typhoid blood. Johnston and McTaggart found genuine colon reactions with typhoid blood to be rare, provided the typhoid reaction was well marked. In several cases, however, where the symptoms suggested typhoid but the typhoid-serum reaction was absent, they found marked colon reaction. They are inclined, therefore, to attach diagnostic importance to the latter reaction. The colon cases were mild and of shorter duration than ordinary typhoid fever.

Kühnau makes use of the colon reaction to assist in the diagnosis of typhoid fever in doubtful cases. He finds that normal serum reacts in the same way with both colon and typhoid bacilli, whereas typhoid serum, even when of weak specific power, reacts much more intensely with the typhoid bacillus than with the colon bacillus. By availing himself of this unequal action of typhoid serum upon the two species of bacteria, he felt justified in making the diagnosis of typhoid fever when the agglutinative power of the serum did not exceed 1 to 20. Kühnau's suggestion is interesting, but further investigations are needed to determine its value.

We must also await further studies before Johnston and McTaggart's highly suggestive views as to the existence of colon infections simulating typhoid and capable of diagnosis by the serum reaction with the colon bacillus can be accepted.

As was first pointed out by me in 1890, the colon bacillus is an extremely common secondary invader of the body in all sorts of conditions, particularly those with lesions of the intestine. It can very frequently be found in internal organs outside of the intestine in typhoid fever, if careful search is made. We have no satisfactory proof that it produces either symptoms or lesions in most of these cases, and one would expect more common and intense serum reactions with bacillus coli in typhoid fever, if the organism was engaged in pathogenic work. The writer has repeatedly taken occasion to protest against what seem to him unwarranted inferences as to the pathogenic significance of the mere detection of the colon bacillus in the internal organs at autopsies, although there can be no question that under certain conditions this bacillus may be pathogenic for man.

As the colon group of bacilli contains numerous races, some approaching the typhoid bacillus closely, it is to be expected that they will vary markedly in their sensitiveness to agglutination with different sera.

Durham found that typhoid-immune serum in no instance produced any agglutinative reaction with ten specimens of the bacillus coli obtained from various sources. Colon-immune serum reacted

on its own race of bacilli exactly like typhoid serum on typhoid bacilli, but it did not react with all races of colon bacilli, a graduated series of effects being observed with different specimens of these bacilli. Rodet, however, whose duties are reported in much less detail than those of Durham, found a certain degree of reciprocal action between colon- and typhoid- immune sera and their respective bacteria.

Date of Appearance and Disappearance of the Typhoid-Serum Reaction. Absence of Reaction.—The presence of the specific agglutinative reaction can usually be counted on by the end of the first or the beginning of the second week of typhoid fever. It may appear as early as the second day of the disease (Johnston and McTaggart, C. Frænkel), but this is very exceptional. It may here be noted that the determination of the exact day of a disease, often so gradual and insidious in its development as typhoid fever, must frequently be more or less arbitrary, and will vary according to the case and with different observers. Sometimes the first appearance of the reaction is delayed, exceptionally until the end of the second or into the third week, or even later. There are cases in which the reaction is missed during the first attack and makes its appearance in the relapse (Breuer, Thoinot, Biggs, Park, and others). It has been missed until the first days of convalescence. Blumenthal relates an interesting case in which the reaction was absent during the fever, tests being made on the twelfth and twenty-first days with serum-dilutions of 1 to 10, but it was found with dilutions of 1 to 100 two days after the beginning of apyrexia. Achard likewise once found the reaction only during convalescence. We have not, at present, a sufficient number of accurate data to furnish definite figures as to the frequency of these delayed reactions, but their occurrence undoubtedly constitutes a defect in the method of serum-diagnosis of some importance. A negative result of the test does not exclude the diagnosis of typhoid fever. The probability against this diagnosis is the greater, the later the period of the fever in which the negative result is obtained and the oftener the examinations are repeated. As regards the interpretation of negative reactions, the serum-test does not differ from other bacteriological diagnostic tests,—that for the tubercle bacillus, for instance.

There are authentic cases of typhoid fever in which repeated examinations of the blood during the course of the disease and its convalescence failed to reveal the specific agglutinative reaction, even with serum-dilutions of 1 to 10. We cannot, at present, say what percentage of the total number they make. Widal and Sicard found absence of the reaction in only 1 out of 163 cases of typhoid fever examined by them. In this negative case, in which the diagnosis was confirmed by cultivation of typhoid bacilli obtained by hypodermic puncture of the spleen, the reaction was absent during the fever, the apyrexia, the relapse, and the convalescence. Of 116 cases of typhoid fever examined by Courmont, the reaction appeared in all, being delayed after the eighth day in only five. Of 70 cases examined by Chantemesse, it was present in all. Of 129 cases examined by Johnston and McTaggart, if a few cases examined only in convalescence, or at a very early stage without re-examination, be excluded, the reaction was missed in only 1. In many reports cases, believed to be typhoid, are recorded as giving negative reaction when only one

examination was made, this being sometimes early in the disease. Such cases doubtless belong mainly to a group with delayed reaction. The importance of repeated examinations is illustrated by such observations as Stern's, in which the test was negative at the end of the second week and positive two days later; of Widal's negative on the tenth, positive on the twenty-second day, and several others of similar purport.

The agglutinative power of the blood tends to increase during the progress of the fever, but there are exceptions, and, in general, the intensity of the reaction is subject to irregularities and oscillations, which may be notable from day to day. There may be marked sudden rise or fall of reactive power. While weak reactions are more common in mild cases, there is no definite correlation between premature or delayed development or the intensity of the reaction and the gravity of the disease. The persistence of high agglutinative power—for example, 1 to 2000—after subsidence of the fever, does not prevent relapses.

In the majority of cases the specific agglutinative power of the blood diminishes in the first weeks or months after cessation of the fever and disappears within a year. Exceptionally it may vanish as early as eight or ten days after the fever. Widal and Sicard noted its appearance on the eighteenth and twenty-fourth days, Breuer on the seventeenth and twenty-fifth days, E. Frænkel on the twenty-eighth day after defervescence, etc. Disappearances at such early dates as these are, however, not the rule. According to Courmont's experience, the serum reaction disappears in children most frequently during the course of the first two months, and in adults toward the fifth and sixth months, although it is not uncommon for it to continue a year. The specific reaction may, however, persist for years, perhaps indefinitely. Of 40 cases which had had typhoid fever at least a year before examination, Widal and Sicard found the agglutinative reaction, either marked or slight, in 11; after one and one-half years, 1 case, reaction weak; after two years, 1 case, reaction weak; after three years, 2 cases, in one marked, in the other weak; after six years, 1 case, reaction 1 to 10; after seven years, 1 case, reaction marked; after eight years, 1 case, reaction, 1 to 1800; after nine years, 3 cases, one marked, 1, 1 to 40, and 1, 1 to 30; after twenty-six years, 1 case, 1 to 30. Kühnau found, after one year, 2 cases with reaction of 1 to 80; after two years, 1 case, reaction 1 to 60; after seven years, 1 case, reaction 1 to 60. All others of a series examined (total number not stated) showed negative reaction after one year. It was observed by Widal and Sicard that, in contrast to the reactions during infection and for the first weeks after defervescence, those of long standing showed no notable fluctuations in intensity during the periods of examination, extending sometimes over several weeks.

The persistence of the specific reaction after typhoid fever is of importance from two points of view: retrospective diagnosis and interpretation of the diagnostic significance of the reaction during a febrile infection. It is sometimes of interest and practical importance to determine that an individual has previously had typhoid fever. Thus Courmont was able, by the serum-diagnosis, to determine that a patient with multiple neuritis, supposed to follow an attack of dys-

entery, was, in reality, convalescent for a month and a half from typhoid fever, and Achard recognized the real nature of an attack of osteomyelitis in a patient who had typhoid fever a year before (cited from Widal and Sicard).

Many writers have called attention to the evident possibility of a mistake in diagnosis when the serum-reaction is found in a person with a febrile infection, who has recovered from typhoid fever, although it does not appear that any serious difficulty has been encountered thus far from this source of error. It, however, indicates the importance of obtaining a careful history of the patient, not only as regards recognized typhoid fever, but as to attacks intepreted as dysentery, gastric fever, appendicitis, malaria, etc. An observation reported by Stern indicates that the specific typhoid reaction may be acquired even without manifest illness. He suggests that careful quantitative estimations of agglutinative power may restrict the possibility of error in diagnosis arising from long-persistent reactions, as increase or diminution in the course of the fever or of the convalescence would speak for fresh infection. Even if the fullest possible allowance be made for this source of error, it applies to so small a number of cases that the value of the method is not seriously impaired.

Presence of the Reaction in Non-typhoid Cases.—The blood of many hundred persons, either healthy or affected with diseases other than typhoid, has been tested for the specific typhoid reaction, and it can now be asserted that a serum reaction, which an experienced observer using accurate methods would consider characteristic of typhoid fever, is to be found most exceptionally in those who have not had typhoid infection.

Several observers, especially the Germans, find that by adherence to Widal's original directions mistakes may occur, but that these can be avoided by attention to quantitative determinations, especially dilution of the serum, time-limits, and characters of the culture used for the test. The most remarkable observations on this point come from Breslau and are reported by Stern and Kühnau. Stern examined the blood-serum of 70 persons not suffering from typhoid fever, and, according to their statements, never having had typhoid fever. In 20 of these the serum had an agglutinative strength of 1 to 10, in 5 a strength of 1 to 20, and in 2 a trace of reaction was obtained, with dilutions of 1 to 30. In none of these cases did he find any reaction with dilutions of 1 to 40. Of more than 50 similar cases examined by Kühnau, in 41 no reaction was obtained with dilutions higher than 1 to 5. In 8 agglutination was obtained with dilutions of 1 to 10, up to 1 to 20; in 4 with 1 to 30; in 3, 1 to 35, up to 1 to 40; and in 1 even with 1 to 50.

In judging these results, apparently so divergent from those of Widal and nearly all others, it is to be noted that both Stern and Kühnau used the microscopical reaction, made two hours the time-limit, even for the lowest dilutions, kept the specimens in the thermostat, and that Stern regarded the clumping and Kühnau the paralysis of motion as the criterion of the reaction, thus apparently recording as genuine what many others would consider partial or pseudo-reactions. It is clear that those who interpret only complete reactions occurring within fifteen to thirty minutes at room-temperature as

genuine reactions would not be likely to obtain any such results as those reported by Stern and Kühnau. Nevertheless, it must be admitted that even partial and late reactions are unwelcome and disturbing, even if an observer thinks that his skill and experience will enable him to avoid mistakes from the occurrence. It may also be, as suggested by C. Frænkel, that Stern's and Kühnau's normal and non-typhoid cases include not a few who had recovered from unrecognized typhoid infection, and this supposition is the more probable in consequence of the prevalence of typhoid fever in Breslau. Stern himself calls attention to the liability of failure to recognize certain mild cases.

There have been a few cases reported in which the diagnosis of typhoid fever was made on the basis of the serum reaction, but which the authors, from subsequent developments, considered to be free from typhoid infection. It has been claimed, therefore, that positive serum reactions are not a sure sign of typhoid fever, although no one claims that the chances of error from this source are more than slight. The cases reported by Achard and Bensaude, Jez, Ferrand, du Mesnil, and Van Ordt have given rise to the most discussion. For what seem to the author justifiable criticisms of these reports, he would refer especially to the papers of Widal and of Stern, and limits his remarks to some general statements concerning such alleged failures of the serum test.

In the first place, as the matter now stands, positive reactions obtainable only with dilutions lower than 1 to 50, possibly than 1 to 60, especially if the reaction is partial and late in appearance, are not certain diagnostic signs of typhoid fever. In most of the cases just referred to no exact quantitative estimations of the agglutinative strength of the serum were made, and hitherto it has not been shown that the reaction ever occurs with non-typhoid serum in dilutions exceeding 1 to 50, with observance of other quantitative points which he has already considered. With the limited number of observations, however, which we now possess, we cannot, of course, say but that such cases will be found in the future.

In the second place, infection with the typhoid bacillus cannot be positively excluded either on clinical grounds alone or by anatomical examinations at the post-mortem table. Infections with the typhoid bacillus occur without any characteristic anatomical lesions. There may be entire absence of ulcers or other lesions of the intestine. There has recently been, at the Johns Hopkins Hospital, a case with positive serum reaction, from which Dr. Flexner cultivated, in large number, typical typhoid bacilli from the gall-bladder, although there was no previous history of typhoid fever, and there were no intestinal lesions. In 1891 the author called attention to the favorable conditions offered by the bile for the prolonged survival of the typhoid bacillus. In one case the author was able to demonstrate large numbers of typhoid bacilli in the bile of a rabbit, one hundred and twenty-eight days after intravenous injection of 0.5 c.c. of a bouillon culture. Pick has reported a case with marked positive serum reaction in which at the autopsy no typhoid intestinal lesions and no swelling of the spleen were found, but bacteriological examination showed the presence of typhoid bacilli, not, however, in the spleen. Guinon and

Meunier's case is instructive. During life the symptoms were those of acute miliary tuberculosis and typhoid fever combined. Serum reaction was positive. At autopsy the lesions appeared to be only those of acute miliary tuberculosis, small ulcers in the intestine being typically tubercular in aspect. Typhoid bacilli, however, were cultivated from the spleen and other parts. As both the symptoms and the bacteriological examination indicated that the typhoid infection was in course of disappearance, the case, if examined at a somewhat later period, might readily, as Guinon and Meunier remark, be placed to the discredit of the positive value of the serum-test. We are justified, in the light of such cases as these, in demanding that thorough bacteriological examinations be made before cases which have given, during life, the characteristic serum reaction, but which do not present, at autopsy the anatomical lesions of typhoid fever, be recorded as free from infection with the typhoid bacillus.

In the third place, the difficulty of excluding a previous attack of typhoid fever, after which, as already stated, the specific serum reaction may exist for years, is to be borne in mind.

In conclusion, the author would emphasize the following practical points:—

1. Experience has demonstrated that the method of serum-diagnosis of typhoid fever is of great practical value.

2. The alteration of the blood on which this method is based is a specific effect of infection or intoxication with the typhoid bacillus.

3. The microscopical serum-test is to be preferred to the macroscopical methods.

4. Quantitative determinations, relating especially to the culture, the time-limits, and the dilution of the serum, are of importance, and, at least in doubtful cases, should not be neglected.

5. As the reaction may be delayed or occasionally absent, a negative result of the test does not exclude the diagnosis of typhoid fever. The later in the course of the disease the test is applied, and the oftener the examinations are repeated at intervals, the less is the probability of the existence of typhoid fever.

6. The persistence of the reaction, sometimes for years, after recovery from typhoid fever, is to be borne in mind in interpreting the reaction in febrile conditions. The appearance of the reaction and its increase during the period of observation speak for fresh typhoid infection.

7. The danger of mistakes from positive reactions in non-typhoid cases can be guarded against in nearly all cases.

8. Provision should be made, especially by the establishment and support of municipal or State laboratories, to render generally available to practitioners the serum method of diagnosis, as well as other bacteriological procedures of similar practical value.—Journal of the American Medical Association, August 14, 1897.

New Hampshire Medical Society.

Uncommon Nasal Paræsthetic Neurosis.—Dr. Samuel Ayres, of Pittsburgh, reported the case of a lady, 23 years of age, recently married and of a neurotic temperament, in whom a nasal disturbance

began eight years ago, and was characterized by periodical flushings over the end of the nose. The attacks have increased in frequency and now consist in a sense of burning in the integument of the end of the nose or over the entire cartilaginous portion. At the same time there is general restlessness and considerable mental depression. No cause could be discovered. Various remedies had been used, such as local applications and the internal administration of bromides, cannabis Indica, ergotine, etc., with only temporary benefit.—Boston Medical and Surgical Journal, October 7, 1897.

Clinical Notes and Therapeutic Suggestions.

Varying Infection in Pneumonia.—Dr. W. H. Thomson, of New York, in an interesting article recognizes that of late years lobar pneumonia often fails to follow the definite course commonly ascribed to it. Although its onset remains much the same in its suddenness, and in the rapid development of its acute symptoms, yet for some time he has declined to fix the probable date of the crisis or the duration of its subsequent stages. It may be that the advent in 1890-'91 of the severest and most prolonged visitation of epidemic influenza recorded in history may have something to do with this change by contributing the influence of a mixed infection; but whatever be the cause, there is little doubt that acute lobar pneumonia now often departs more widely from its former characteristic course. In the histories of a series of 11 cases occurring consecutively in his winter service in Bellevue Hospital, in only 3 of them could it be said that they conformed to the old-fashioned type, with a definite crisis and a progressive change for the better afterward, while in 3 a partial crisis only occurred, and in 5 none at all. In 8 out of the 11 the convalescence was very tedious, and marked by a variety of constitutional symptoms, in which often the essentially toxic nature of the disease was strikingly indicated. Nothing could better illustrate than they did what a gain it was to modern pathology when lobar pneumonia was finally recognized as more an infection than an inflammation, and that its danger is due rather to systemic poisoning than to pulmonary damage. That infections by micro-organisms, however, should vary in their developments from time to time is what we should expect, and it is this feature which a brief abstract of these clinical histories seems particularly to exemplify.

The author then gives the clinical features of 11 cases. They all began with a pronounced chill or chills, except 1, in which the patient had never had any. In 5 of the 11 there was no definite crisis, in 3 there was a partial crisis, in 2 it was typical, and in 1 fairly so after a cold bath. In the 2 cases, in which the recovery was steady and shortest of all, one, a woman, had the pneumonia set in on the second day in childbed; the other, a man, was a confirmed alcoholic. Of those who had no crisis, the first was a chronic drunkard, but the disease ran a mild course. The second had been a strong, healthy, and temperate man, but the consolidation continued for four weeks, during most of which time his situation seemed desperate

from heart-weakness. The third case had double pneumonia, but his highest temperature barely reached 103° F., and then his lungs took six weeks to clear up, during the most of which time he lay in a semi-comatose condition, with intense cardiac depression. The fourth, a strong man, for some days had the highest temperature of all, followed by irregular lysis, but from first to last showed no cardiac weakness and no complication except suppurative otitis media. The frequent association of the pneumococcus with suppurative otitis (Netter, in 46 children, in whom he found the pneumococcus in their inflammations, found it in 29 cases of otitis and in only 1 with pneumonia) caused him to look for the presence of that organism in the discharge, but not only was it not found in it, but he was also 1 of the 3 in the list in whom no pneumococcus was found in the sputum. The fifth was delirious or comatose for more than five weeks, during which time his pulse was frequently imperceptible at the wrist, and nothing but the most vigorous exhibition of cardiac stimulants appeared to keep him alive.

From the general systemic effects of the poisons elaborated locally by the diphtheria organism, in which the disastrous digestive properties of its toxins manifest themselves in the heart-muscle, kidney-cells, etc., the author states that he feels certainly justified in surmising that the pronounced cardiac symptoms in so many of the cases in the foregoing list were due to analogous direct poisoning of the heart by pneumococcus-toxins. Why this organism at one time should spend its activity on the lungs and then suddenly subside, and at another act in a very different fashion on other organs, is as little explicable as why it generally does not infect at all, though undoubtedly present.

The practical deduction from both clinical and bacteriological observations of the facts of pneumonia emphasize anew the utter futility of treating diseases according to their names. From many clinicians we hear that it is doubtful whether the treatment of pneumonia is any more successful now than it was thirty years ago. This doubt he fully shares; but one reason may be that pneumonia is too much regarded as pneumonia and nothing else, instead of being an infectious disease which produces very differing effects in those attacked according to very varying conditions in the infection. Moreover, at the very outset, it is unsatisfactory to treat a case of poisoning by dealing with its effects or symptoms instead of aiming to neutralize the poison itself. On this account our main hope against this formidable affection is from bacteriology. Owing to its normal tendency to be a sharply defined self-limited disease, there is much more probability, he thinks, that a pneumonic antitoxin will be found in the case of tuberculosis, for the chronicity of the latter does not promise well for any inhibitory product developing with the growth of its bacilli. Since 1891 the brothers Klemperer, Bonome, Foà, Emmerich, Issaeff, and others, have proved that the blood-serum of rabbits immunized to the pneumococcus possesses the property of protecting other rabbits against this infection, and they have treated cases of pneumonia in the human subject with the serum of immunized rabbits. Washbourn, of Guy's Hospital, regards this serum as derived from too small animals, and uses a serum, instead, from an immunized

horse, which he has been able to reduce to a definite standard of strength, as in diphtheria antitoxin. This author gives reports of two cases admitted to Guy's Hospital, one of them of double pneumonia, which recovered under its use, and subsequently a very severe case in a fat alcoholic subject in which it appeared very effective. Stepney, in the same journal (April 27th), reports a case of left-lung pneumonia in a man into whom he injected 660 units of Washbourn's antitoxin eleven times during seven days, with no appreciable effects, and the patient died. Kidd, of the London Hospital, reports two cases which recovered, in which Washbourn's antitoxin was used, but he doubts if it had much control over the disease. Time alone will show whether such an antitoxin can be furnished to the profession, as it is from this quarter only that any real improvement in the treatment of pneumonia can be expected.

Left only to dealing with indications, the treatment of the above-mentioned eleven cases, all of whom recovered, was, first, to lessen the vascular excitement of the early stages—*i.e.*, for the first day or so—by aconite and sweet spirit of nitrous ether. As to high temperature, he did not feel solicitous if it does not rise above 106° F., considering the pyrexia rather beneficial than otherwise. His chief task, as will be seen by the records, was to deal with threatened heart-failure, this danger, in a number of them, continuing for such long periods. Besides peptonized food, his chief medicinal recourse was to a prescription of equal parts of the tinctures of nux vomica, digitalis, and strophanthus, of which 25 to 30 drops were given every three hours. Caffeine, with Hoffmann's anodyne, was also used, and the tinctura ferri chloridi. But the most striking effect noted when these failed to act satisfactorily was from doses of 7 to 10 grains of camphor, given hypodermically, dissolved in sterilized olive-oil. In one case it is doubtful if the patient would have been saved without these injections, as his pulse responded to nothing else.—New York Medical Journal, October 9, 1897.

Infantile Scurvy.—Dr. Henry Ashby reports a case of this kind seen with Dr. Alfred Brown. The patient was an infant (a girl) aged 7 months, of middle-class parents. The reporters were given the following history: Healthy born, mother unable to nurse it; it was consequently given Allen and Hanbury's No. 1 food, which consists of desiccated milk; at 3 months of age it was given their No. 2 food, which consists of desiccated milk and maltose; at 5 months of age it was given the No. 3 food, which consists of a malted food, to be made up with fresh milk instead of with water, as are the No. 1 and No. 2; but the mother, thinking that fresh milk would not suit, made up the No. 3 food with No. 2 food. Thus the infant had had for seven months no fresh food at all, but dried milk and maltose made into an emulsion with water. The mother stated that the infant had thriven well, and was always looked upon as a prize-baby, and no doubt her photograph would have formed an excellent testimonial for the food-supply. For two or three weeks past she has had a bad cough. Two weeks before their visit, the nurse noticed the left eye-ball was very prominent; this appears to have come on suddenly, and so prominent was it that the nurse said she fully expected "it would drop out." This was attributed to a slight blow the infant had had

on the eye from a "teat," or "comforter," tied at the end of a string. The eye has continued prominent ever since. She had had several "bad faints."

On examination the baby was found large, fat, and pale; there was a temperature of 101° F. She was drowsy, but was readily roused. The left eyeball was very prominent, and, while the right eyelid closed naturally, the left ball was, in part, exposed, as the eyelids, when closed, would not meet. The eyelids were not puffy, there were no ecchymoses either on the eyeball or elsewhere. The ribs were beaded, but there was no tenderness about the limbs or bones. She had some bronchial catarrh, and a persistent cough. No teeth were cut; the gums were normal. The nurse stated the urine stained the napkins a brownish color, but this could not be substantiated by the physician.

Under 3 teaspoonfuls of orange-juice daily and 30 ounces of fresh milk the little patient made a quick and satisfactory recovery, the eyeball gradually regaining its normal position.

There is no doubt that this was a case of infantile scurvy. An hæmorrhagic diathesis had been set up by improper feeding. The cough was the exciting cause of an effusion of blood taking place between the periosteum of the orbit and the bone, thus pushing the eye forward. Cases of scurvy with subperiosteal orbital hæmorrhage have been recorded before, but there were ecchymoses in other parts as well. The "faints" of which the nurse spoke also are apt to occur in scurvy, and sometimes death takes place suddenly,—an event the possibilities of which it is important to remember.

In the majority of cases scurvy is the result of a continuance, for many months, of an exclusive use of preserved foods. But it is well-known that this is not always the case. It occurs when taking peptonized fresh milk, fresh milk with some starchy food, freshly-made cream-mixture, and fresh meat-juice. In one case of scurvy Dr. Ashby had seen, there was a fracture of the thigh above the epiphysis after slight injury, with subperiosteal bleedings, and hæmorrhagic gums; the infant (12 months old) had been taking 30 ounces of fresh milk daily, made with Neaves's food.

He had seen it twice at least arise in infants in hospitals, both of whom were on a restricted, though fresh, milk diet on account of diarrhœa and vomiting. The cases were the following:—

Jim C., 1 year old, admitted to hospital on January 13th, weight, 10 pounds 4 ounces, had suffered much from diarrhœa and vomiting, was wasted, and his subcutaneous tissues were œdematous; he was given a peptonized cream-mixture. On January 26th he was given 12 ounces of cream-mixture made freshly, and pasteurized, containing fat, 3.75 per cent.; proteids, 1.75 per cent.; and sugar, 6 per cent.; also 12 ounces of beef-tea made with vegetables. On February 2d he had some slight broncho-pneumonia, temperature 98° to 103° F. for a few days. On February 9th it was noted the gums were hæmorrhagic around some teeth that were being cut. He was given 3 teaspoonfuls of orange-juice daily, his food remaining the same; in four or five days his gums were healthy; his temperature was intermittent for some days after.

In another case an infant of 9 months, weighing 9 pounds 6

ounces, when admitted, was given 25 ounces of cream-mixture and beef-tea, made with potato; the gums became hæmorrhagic, and the right femur tender and swollen. The hæmorrhage disappeared in a week after orange-juice was given, and without change of diet.

In both these cases the digestive organs could not deal successfully with a larger quantity or a stronger food than what they were taking. Whatever may be the explanation, the fact remains they were cured, as far as the scurvy was concerned, by orange-juice. Neither raw beef-juice nor vegetable beef-tea prevented them from having scurvy.

In a conversation with Dr. Nansen on the subject of scurvy which Dr. Ashby had had during that distinguished Arctic explorer's recent visit to Manchester, he expressed his belief that scurvy was a chronic ptomaine poisoning, the ptomaines being derived from badly-preserved milk, tinned meat, or salt beef. He believed that if the provisions were well sterilized and no subsequent changes took place in the food, there would be no scurvy in the ship's crew, and it was unnecessary to take preserved vegetables or lime-juice. No doubt, regular exercise, fresh air, and temperate habits also conduced to freedom from scurvy, which has been in times past such a scourge and a danger in Arctic exploration.

That scurvy is very suggestive of ptomaine poisoning there can be no doubt, and it may possibly be, as Dr. Nansen suggests, the result of either taking the ptomaine into the stomach as such or the ptomaine being formed from the food in the stomach.

Yet it seems absolutely certain that orange-juice will cure scurvy, at least in the early stages, and if scurvy is really a ptomaine poisoning it is difficult to understand how orange-juice acts.—Medical Chronicle, September, 1897.

Chlorate of Potassium as a Poison.—In an editorial the Therapeutic Gazette, of September 15th, refers to the dangers attending the use of chlorate of potassium. For many years the medical profession, with but little knowledge of the pathological conditions connected with diphtheritic infection, and with still less information in regard to the influence of chlorate of potassium upon the human body, were in the habit of employing this drug in large quantities in the treatment of diphtheria, some using it because it was supposed to exercise a favorable influence upon the local diphtheritic process, both when it was swallowed and when it was eliminated by means of the salivary glands; others, still more ignorant of its influences, employed it with the ridiculous idea that it was capable of yielding oxygen to the body and so supporting the system; while still others believed that the additional oxygen which it gave forth actually aided in the elimination of the effete products of the disease and thereby enabled the patient to resist its ravages. With our increased knowledge concerning the bacillus of diphtheria and the pathological changes which its toxins produce in the body, this method of treatment became less and less popular, and finally, when the profession grasped the idea that chlorate of potassium was not the innocent drug that it was thought to be, its use in diphtheria became still more limited. There are still quite a number of physicians who continue to employ it either as a matter of routine practice or because they are unaware of its deleteri-

ous influences. The literature of medicine will be found to contain, as each year goes by, more and more cases in which the abuse of this remedy produces poisonous influences in the body, which are recognized to-day, although put down to other causes years ago. The object of the editorial note is to insist upon the fact that the chlorate of potassium is, next to the cyanide of potassium, the most poisonous of the potassium salts. As an instance of this, allusion is made to a case which recently occurred in Vienna, in which a boy of 16, who was suffering from sore throat, was given a gargle consisting entirely of chlorate of potassium. Either because of misunderstanding of the orders or through inadvertence the patient swallowed a considerable amount of the drug and death speedily resulted, the inquest revealing all of the usual signs of death from this substance.

Scopolamine in Meningeal Insanity.—Tomassini states that 1-200 of a grain of scopolamine is beneficial as a cerebral depressant in cases of meningeal insanity. If given in injections it does not produce much pain or local reaction; sleep comes on rapidly, the patient being quiet in a very few minutes. The pulse is regular, being little diminished in force or frequency; respiration is not altered. Sleep usually lasts from four to five hours, and may be prolonged to eight hours without any interruption. The cases in which scopolamine is particularly indicated are those in which a powerful sedative is required, as, for example, acute mania and maniacal epilepsy.

Cases of Pulmonary Tuberculosis Reported to Have Originated in Colorado.—Dr. S. G. Bonney, of Denver, Col., alluded to the fact that during the past few years the attention of the profession, and the laity as well, had been drawn to the increasing number of reported cases of this disease developing within the State. Certain physicians of recognized scientific attainments had already considered the evidence sufficient in its authenticity and in its scope to justify the promulgation of immediate conclusions. The interpretation made had been positive and unequivocal to the effect

1. That the obvious source of infection has been largely referable to direct contagion, owing to the large assemblage of pulmonary persons.

2. That the attraction of the climatic conditions of Colorado is becoming, for our present resident population, an embarrassing, if not undesirable, feature.

3. That as a logical result of further importation, tuberculosis is likely to become an important indigenous disease in Colorado.

4. That the very means, therefore, of past preservation to a large proportion of the inhabitants of Colorado is becoming an increasing source of future danger, the inference being implied of the possible ruinous effect upon our communities in generations to come.

5. That, apropos of the alleged alarming dissemination of tuberculosis in Colorado, there should be enacted and rigidly enforced more stringent regulations pertaining to the control or prevention of the disease.

6. That, in addition to the prophylactic measures already employed by the conscientious physician, registration and the segrega-

tion of tuberculous patients, with perhaps other still more radical measures, be insisted upon.

The assumption, through the foregoing conclusions, is evidently to the effect that with the enactment of measures looking to the progressive destruction of the tubercle bacillus the disease may eventually be eradicated from the world.

Dr. Bonney enters a vigorous protest against an undue agitation, at this time, on the ground of insufficient testimony, and because a popular verdict prematurely rendered is attended with unfortunate results of a practical nature.

In support of his position he calls attention to

(*a*) Sources of error in the compilation of official statistics. (*b*) Clinical testimony concerning the extent of non-imported cases. (*c*) Absence of proof that cases reported as developing in Colorado were actually contracted there, and, finally, to the recent scientific observations as to the practical contagiousness of tuberculosis.—Boston Medical and Surgical Journal, October 5, 1897.

The Treatment of Incomplete Abortion.—In a valuable paper based upon a study of 275 cases of abortion occurring in the Maternité de Lariboisière during the last two years, MAYGRIER, of Paris, states that in most of the cases abortion took place during the third and fourth months; and that at this period placental retention is most frequent. Of these, 176 terminated spontaneously and in 99 cases intervention was necessary.

In the cases which terminated naturally expulsion of the whole ovum occurred in hospital in 145 cases. The remaining 39 were admitted with the placenta partially or entirely retained. Complete expulsion occurred after a period varying from a few hours to three days as a miximum. During this time rigorous antiseptic precautions were observed (douches, etc.). All these cases terminated favorably with two exceptions. One patient was septic on admission, and died of septicæmia; the other case died of pulmonary tuberculosis.

In 99 cases requiring operative interference, 55 were treated by digital exploration and removal of fragments and 44 cases were treated by curetting. In this series of cases 6 deaths occurred. In 2 cases, at the autopsy, a perforation was found at the fundus uteri, with peritonitis. Both cases were already infected before reaching the hospital. In 1 curetting had been carefully performed; in the other the uterus had merely been packed with gauze. The third fatal result was due to suppurative salpingitis, operated upon after leaving the hospital. The 3 remaining deaths were due to infection, the patients arriving at the hospital with grave septic symptoms.

Indications for Interference.—1. In every case in which retention of the contents of the uterus is accompanied by hæmorrhage, fever, offensive lochia, or any signs of infection, even if slight. 2. In cases of multiple placenta, as in twin pregnancies. 3. In cases where there is any reason to suppose that abortion has been induced by mechanical means, since sepsis is very commonly present. 4. In all cases, especially in hospital practice, where retention is prolonged for more than three or four days, and the cervix is tending to close over the contents of the uterus.

Methods of Interference.—The use of the finger is regarded by the

author as an excellent method to adopt. The finger is introduced into the fundus uteri, separating the placental attachments. If the cervix is insufficiently expanded to admit the finger, Hegar's dilators should be used. Sometimes loose placental fragments remain *in utero* after separation. In these cases a manœuvre recommended by Budin should be adopted. The uterus should be compressed between two fingers in the posterior fornix of the vagina and the hand above the pubes, and the placental fragments expressed. The uterine cavity should now be swabbed out with a strong antiseptic solution, and a tampon of iodoform gauze inserted into the vagina. Although the curette was used in a large number of these cases, M. Maygrier points out that its adoption is by no means free from danger. He quotes several cases in which the soft uterine wall has been penetrated by this instrument, and in some of these intestine was found to have been strangulated in the perforation. The use of any form of forceps is also to be condemned. If the curette is adopted, it should be of large size, and the cervix sufficiently dilated to admit of the finger being used as a guide.

From these considerations Maygrier is of the opinion that digital removal of the fragments, combined, if necessary, with the manœuvre of M. Budin, mentioned above, is by far the safest method of dealing with cases of incomplete abortion.

Finally, mention should be made of the administration of quinine to facilitate expulsion of the placenta or its fragments. This is a simple method, and in a certain number of cases is very effectual.—L'Obstetrique, July, 1897; and Medical Chronicle, of September, 1897.

The Curative Power of Fever.—A. Lowey and P. F. Richter energetically defend a view now held by a large number of clinicians, that fever in acute infectious diseases is one of the weapons of defense possessed by the animal body. In proof of this they detail a series of experiments on rabbits, consisting in the production of high temperature by the "heat-puncture," *i.e.*, by injury to the corpus striatum and subsequent inoculation of the animals with the minimal lethal dose or its multiple of pneumococcus, hog cholera (Schweinerothlauf), and diphtheria. The results showed that the animal in which fever had artificially been produced lived longer than the controls; some, indeed, survived the infection.

Although indicating the curative power of fever, the authors do not oppose the proper use of antipyretic measures, when these have favorable incidental effects (quieting the nervous system, etc.). But, they add, it may be profitable to search for pyretic agents,—*i.e.*, such that evoke an artificial rise of temperature.—Canada Lancet, October, 1897.

Abdominal Section for Perforating Gastric Ulcer.—Dr. R. C. Kirkpatrick reports the case of a patient who was taken ill on March 3, complaining of intense pain in the upper part of the abdomen. She had previously been in good health, with the exception of a slight amount of indigestion. On this morning she had gone to her work as usual and about eleven o'clock was suddenly seized with intense pain in the region of the stomach. She became very faint, but did not lose consciousness. She was conveyed to her home, where

the doctor saw her shortly after one o'clock. At that time she was pale, with a rapid pulse and subnormal temperature. On examination, the whole abdomen was tender, but the point of maximum tenderness was in the epigastric region. She was removed to the hospital, and at three o'clock, four hours after the onset of the attack, the abdomen was opened. Stomach-contents escaped as soon as the peritoneum was cut through, and a short search revealed a perforation in the anterior wall of the stomach, four inches from the cardiac orifice and near the lesser curvature. The opening was about the size of a bean. The edges were drawn together by a row of continuous sutures and then inverted by a double row of Lembert sutures. The peritoneum in the vicinity was cleansed by sponging, no irrigation being used. A drain was inserted and the abdomen closed. A glass drainage-tube was inserted into the pelvis through a small opening made just above the pubes, and from this latter opening fully a pint of turbid serous fluid escaped. The upper tube was removed in twenty-four hours and the lower tube in forty-eight. In twelve hours small quantities of hot water were given by the mouth, and in twenty-four hours milk and lime-water were given. The patient made an uninterrupted recovery.—Canada Medical Record, August, 1897.

Theobromine in the Asystole of Old People.—Dr. E. Baronaki states that theobromine, in the asystole of old people, rapidly causes a diuresis amounting to 4, 5, or 6 litres, and wards off the symptoms of uræmia. This marked diuresis is especially noticed in the chronic asystolia so frequently observed in old people accompanying œdema, anasarca, and ascites. In the pulmonary or hepatic forms theobromine does not seem to have the same diuretic action. Diuresis may come on the very evening of the administration of the drug, but most frequently the following day. It leads to a marked improvement, the signs of uræmia disappear rapidly, the respiration becomes better, and the patient is out of danger for some time. The most marked diuresis is obtained when the use of theobromine has been preceded by digitalis. Association of theobromine with caffeine or with salicylate of soda does not give better results than theobromine alone. The author recommends large doses; with 30 grains no appreciable diuretic effect is obtained, 45 grains being necessary; while 60- or 75- grain doses do not increase the diuretic effect. When the dangerous symptoms have disappeared the theobromine should be discontinued and iodides given. Dr. Baronaki has noticed, as inconveniences of the prolonged use of theobromine, vomiting, nausea, vertigo, and phenomena of excitement. He has also observed an increase of the quantity of albumin in the urine.—Gazette des Hôpitaux, July 27, 1897.

Amœboid Bodies in the Blood of Vaccinated Subjects and in Cases of Variola.—Surgeon Walter Reed, U. S. A. (Journal of Experimental Medicine, September 18, 1897), confirms the observation that small granular amœboid bodies are present in the blood of vaccinated children and calves, and in that from cases of variola during the stage of fever. Nuclei in any of these bodies could not be positively made out. Similar granular amœboid bodies, having a diameter about one-third that of a red blood-cell, were found also in the blood of monkeys during the active stage of vaccination disappear-

ing with the decline of the local inflammation. A body of like appearance, granulation, and size was occasionally found in the normal blood of monkeys and children. Pale amœboid bodies containing a few dark pigment-like granules were found in the blood from cases of variola and in that of a variolated monkey. Bodies of like appearance were occasionally found in the blood of vaccinated children and monkeys.—New York Medical Record, October 9, 1897.

Death from Lead Poisoning Due to the Use of Hebra's Ointment.—Hahn reports the case of a child which was treated for a long time with Hebra's ointment for eczema of the scalp. General convulsions finally ensued, the skin became very pale, the gums presented the characteristic blue line; the patellar reflexes were exaggerated, and the child died. The cause of death was confirmed by autopsy and an analysis of the urine.—L'Abeille Médicale, March 27, 1897.

Ichthyol in Gastro-intestinal Diseases.—Lange recommends a pill of 1½ grains of ichthyol every hour or two in all severe cases of acute intestinal catarrh, also in all cases of chronic catarrh of the rectum and hæmorrhoids in which there is a great tendency to tympanites with foul evacuations. He states that this treatment is very efficacious, and he has never known it to give rise to anything worse than eructations.—Allgemeine medicinische Central-Zeitung, No. 3, 1897.

Writer's Cramp.—Edward W. Wright states that writers' cramp has three chief theories regarding its pathology:—

1. A local disease; a weakness in some muscles permits the overaction of their antagonists, which increases the spasm.

2. A reflex action: the result of the stimulation of the sensory nerves in the act of writing.

3. A central origin; a want of proper balance in the co-action of the motor centres concerned in the action of writing.

The latter seems to be the most satisfactory. In the muscular group of the eyes we can have all of the causes present. If the causes be present in the ocular muscles that produce writers' cramp in the hand of writers, can we not have cramp in the muscles involved in reading?

Constant tension of all the ocular muscles at close range for long periods of time, with a weak individual muscle or pair of muscles, with overtaxed nerves, and an exhausted cortex, are the prominent conditions that would lead to spasm or cramp of the ocular group of muscles.—New York Medical Journal, September 11, 1897.

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Medical Treatment of Puerperal Septic Diseases.—DR. C. J. JEWETT, of Brooklyn, gave a brief outline of the general plan of treatment, beginning with the statement that if sepsis develops in a puerperal woman the physician is to blame. Sepsis is a preventable disease, and what is wanted is prophylaxis. It is not only necessary to be aseptic at the time of labor, but the asepsis should begin weeks before. Conditions such as anæmia, albuminuria, syphilis, etc., should be treated, and the state of the digestive tract and alimentary canal looked after to guard against auto- and fecal intoxication. Sepsis does not occur in people whose kidneys are in good working order. Attention must be given to the birth-canal, in which microbes may be present, and pre-existing disorders of the bladder should be investigated. Gonorrhœa is a frequent cause of pueperal sepsis. If present the vagina should be douched twice daily with a solution of bichloride of mercury for two or three weeks previous to labor, or the vaginal canal may be dusted with subnitrate of bismuth. The importance of asepsis culminates in the labor. Obstetricians of special training have practically no death-rate in their practice, and there should be none. Douching during labor is not only useless, but positively harmful, for it washes away and interrupts for hours the flow of the natural acid secretion of the vagina, which is its own protective agent against disease-producing germs.

Infection is most liable to occur during the first few hours after the birth of the child. The resistance of the tissues, especially those of the vagina, is at a minimum, and for this reason manipulation of the lower passages is dangerous. Introduction of the hand is dangerous. Retained remnants of the placenta or of the secundines had best be left to be cast off spontaneously. The advantages of immediate

suture of lacerations of the cervix are doubtful, unless they cause hæmorrhage.

As soon as infection is suspected, an examination should be made. Septic vaginal wounds should be cleansed twice daily, touched with iodine or chloride of zinc, and a strip of gauze inserted in the vagina. If douches are required, peroxide of hydrogen or Labarraque's solution may be employed. The treatment of the uterine cavity requires much tact and judgment. The risk of carrying infectious material with the hand from the vagina to the uterus must be borne in mind, and for this reason the dull curette is best employed to ascertain if there is necrotic material in the uterus, should this be suspected; but the curette should not be used as a routine measure. The presence of sepsis in the uterine cavity can be determined by the odor of the material which clings to the curette, and which should be subjected to a bacteriological examination. Decomposed blood-clots and all other *débris* should be removed with the curette, which is cleaner than the finger. Intra-uterine irrigation with a non-toxic disinfecting fluid should then be practiced to wash away all putrescent matter. The entire cavity of the uterus may then be painted with iodine, a solution of carbolic acid (1 to 40), or with phenique. A loose packing of gauze should then be introduced and allowed to remain for twenty-four hours, or pencils of iodoform may be inserted. It is well to irrigate first with salt solution or a mild antiseptic. In the absence of *débris* in the uterus the curette is contra-indicated.

In violent forms of infection local measures will do no good. Intra-uterine irrigation is of but little use except to wash away *débris*. Some advocate the introduction of a soft draining-tube, and the washing out of the uterus with absolute alcohol. Iodine-water has also been recommended for this purpose, and in Germany intra-uterine injections of steam have been practiced. The uterus is first curetted and the steam at a temperature of 100° C. (212° F.) is injected through a perforated metal tube for two minutes; the temperature of the steam is then raised to 112° C. (233.6° F.) and the injection continued for fifteen seconds. It is said that no pain or discomfort follows this treatment, the metal tube being so incased that it does not burn the parts with which it comes in contact.

The systemic treatment should be such as will control the local septic process as well as keep up the patient's strength. Alimentation and elimination are important. Alcohol should be administered to th point of intoxication, but this, unfortunately, is not well borne by the stomach. Strychnia and quinine should be given, especially the former. The latter is of value in small doses: in large doses it does harm by hindering oxygenation. Sparteine and other cardiac stimulants are of value in heart-depression. Feeding should be limited to liquid foods, predigested if necessary. An abundance of fresh air is imperative. All measures tending to elimination should be employed, and plenty of water administered. Experiments show that three times as much poison is required to affect animals which drink water as is needed to affect those who do not. The administration of saline purgatives is also important, and ergot is recommended to limit diffusion of the septic poison. Intravenous injection of mercuric chloride has also been practiced, but this is hardly to be recommended

in general practice. The subcutaneous injection of turpentine has also been suggested. The coal-tar antipyretics are not only heart-depressors, but they hinder oxygenation. Cold bathing, on the other hand, has the effect of a nerve-tonic, and favors elimination. Cold-sponging is indicated when the temperature is above 100° F. The treatment of puerperal sepsis by antistreptococcic serum is still under trial, and as yet no definite standard of strength has been decided upon. The author's experience is limited to six cases, and in only one was any improvement noticed. Care should be taken to procure a reliable preparation, and it should be fresh. Nuclein, which acts upon the leucocytes, has recently been recommended. It is to be regretted that, while much has been suggested, little has proved of value in the treatment of local septic disease.

Surgical Treatment of Puerperal Septic Diseases.—Dr. E. H. Grandin said that inasmuch as puerperal infection is simply wound-infection, surgical principles such as are applied to sepsis in other parts of the body should be employed in its treatment. He treated the subject under two headings,—viz., putrid infection (so-called sapræmia caused by toxins) and septicæmia due to pathogenic germs. Sapræmia, treated early and properly, may be ordinarily controlled, because the elements of putrefaction tend to remain localized at the site of their origin. In septicæmia, on the other hand, we have to deal with a condition dependent upon the growth of pathogenic microbes, the streptococcus and the staphylococcus, which, through rapid multiplication and dissemination through the venous and lymphatic channels, make the infection systemic as well as local. A neglected sapræmia may become a septicæmia.

Before deciding upon the treatment, it is essential to determine whether the condition is one of sapræmia or of septicæmia. The most frequent form of puerperal infection is sapræmia, and the uterus is generally its location. The present method of treatment is curettage, which, however, is often resorted to unnecessarily, to the detriment of the patient. At the present time the impulse is to curette in every case, just as formerly it was the habit to employ the intra-uterine douche. The curette is indicated in sapræmic infection; but in endometritis curetting will cause dissemination of the pathogenic microbes throughout the body. Research has shown that in putrid endometritis nature throws out a barrier of leucocytes under the putrescent mass in the uterine cavity, to prevent the passage of microbes into the lymphatics and veins. Local infection will become general infection if this barrier is broken down by curetting. The chances of recovery are good in proportion as the infection remains localized. Therefore our treatment of puerperal sepsis should favor localization, and if surgical measures are employed they should be undertaken before systemic infection is marked. As a rule, putrid endometritis becomes septic endometritis only when there has been infection from without at the time of delivery or during the puerperium, although it is possible for the two to co-exist. The differentiation should be made under perfect asepsis by exploring the cavity of the uterus with the fingers, the patient being anæsthetized. This should be done before the curette is used. The curette is contra-indicated unless the examination shows retained putrid *débris*. If such be the case, the

putrid masses and softened necrotic tissue down to the granulation layer only should be removed. The uterine cavity should then be irrigated and packed with sterile gauze. If no improvement takes place within thirty hours, the case is probably one of septic endometritis, and the less active the treatment the better. Such local measures as will kill the germs at work on the surface of the uterus should be undertaken in the hope of preventing further dissemination. Iodoform gauze should not be used, because the symptoms of iodoform toxæmia, which may set in, resemble those of septicæmia.

In septic endometritis no putrid remnants will be found in the uterine cavity unless there is a combination of both varieties. This form of endometritis leads to septic metritis, salpingitis, and peritonitis. Frequent irrigation with bichloride may be effective.

When infection has ceased to be local and involves uterus, tubes, ovaries, and peritoneum, the main point is not *how* to operate, but *when*. The indications and technic are the same as in similar conditions in the non-puerperal state. The only difference lies in the prognosis. The point is to act before systemic infection is complete. Operation avails but little when veins are clogged with septic thrombi, and liver, spleen, kidneys, heart, and brain have been invaded by septic germs.

Local peritonitis and so-called cellulitis are, as a rule, benign as regards life if they remain localized, and these exudates often disappear without surgical treatment. They may, however, become purulent, and general systemic infection result. When the symptoms remain acute for days, an examination under narcosis should be made to locate the purulent foci, which should at once be incised and drained at the most accessible point. Local peritonitis, however, is in reality extraperitoneal and does not require surgical treatment unless the general peritoneal cavity has become affected secondarily.

If local peritonitis is associated with metritis and salpingo-o-ophoritis, early diagnosis and prompt, radical surgery is necessary to save life. It may become a question of vaginal hysterectomy in order to afford thorough drainage of the pelvis. In such cases, however, systemic infection is so intense that death generally results in spite of operation. The all-important problem of the hour is how to determine at an early stage whether surgery will be efficient. A high grade of metritis calls for hysterectomy, and in cases of septic endometritis the doctrine now is that the uterus should be removed if the injection is localized in the endometrium,—something which no man can determine. Our policy, therefore, must be to treat surgically each complicating factor as it arises, and hope for the best.

In regard to the use of the antistreptococcic serum, cases of general septic peritonitis uncomplicated by the puerperal state have been reported in which cure has followed the antitoxic-serum treatment associated with prompt and radical surgery, but no well-authenticated case has been reported where this result was obtained in the puerperal state.

Other varieties of peritonitis, in which the prognosis is more favorable, may complicate the puerperium. The peritoneal cavity may become infected by the rupture of an abscess of the vermiform appen-

dix or of a pre-existing ovarian abscess or pyosalpinx. In either event the case should be treated as usual in that condition.

Dr. Charles P. Noble, of Philadelphia, said the results of the serum treatment of these cases had not been satisfactory in Philadelphia. Twelve cases with six deaths and six recoveries have been reported there by various men, and the general opinion is that the serum is harmful. It is but fair to admit that the cases in which it was employed were of more than average severity. Personally, he did not feel inclined to use the serum treatment unless bacteriological examination showed the presence of streptococci in the system at large. He emphasized the importance of making a careful diagnosis, and agreed with Dr. Grandin that an examination of the uterine cavity should be made under anæsthesia. He would also investigate the condition of the vagina, as infection from lesions of that canal and perineal lacerations are common. If these be discovered early, the septic process can be cut short by touching them with carbolic acid or nitrate of silver. In cases seen late, a thorough examination is of value in showing the source of infection and in determining whether or not pelvic exudate is present. In regard to the employment of radical surgical measures in cases of puerperal infection, he referred to the frequency with which these patients recover with intact organs and advised against extirpatory operations. He cited a case in which he had attempted to do an abdominal section, but was forced to desist because the patient could not be anæsthetized, and he was finally obliged to drain *per vaginam* without narcosis. The woman made a good recovery, and much to his surprise has since had another baby. When employed early, surgical drainage results in recovery in many cases, and, therefore, great conservatism should be practiced. When suppuration has not occurred, medical treatment will result in cure. In the matter of intra-uterine injections, he is of the opinion that the length of time during which they are employed should be limited, as he sees no advantage to be obtained from prolonged irrigation; if used longer than one or two days, it is more apt to do harm than good. His experience with the intravenous use of salt solution leads him to believe that it is an agent of great service in drawing off ptomaines and in keeping up the strength of the heart.

Dr. Paul F. Munde expressed himself as being gratified by the conservative stand taken by the authors in regard to surgical interference. Some years ago he saw in consultation many cases of puerperal septicæmia, and he had always felt that there was nothing to do but to keep the patient alive while the disease ran its course. If this were possible, she recovered; if not, then she died. He believes that much is to be expected of the new antitoxin treatment, which he has used in two cases with the most satisfactory results. The speaker was glad to hear the use of the curette advocated only in cases where placental tissue and *débris* are retained in the uterine cavity. Removal of the uterus in puerperal infection is not, as a rule, a good operation and generally results fatally. Cases of septic purulent peritonitis, whether puerperal or not, should be opened and drained.

Dr. Henry C. Coe remarked that the treatment of puerperal endometritis, at first very conservative, then very heroic, and again very conservative, never seems to reach a middle ground. In looking

back to the time when it was the custom to wash out the uterus every two or three hours day and night, he is impressed with the remarkable power of resistance which the patients must have to be able to stand the nervous shock and physical fatigue of the often repeated intra-uterine irrigation. After that, when the curette came in vogue, all cases were curetted and much harm resulted. He agreed with Dr. Grandin that the differential diagnosis in puerperal fever could only be made by exploring the uterus with the fingers under narcosis, but added that this is not always possible in cases where the uterus is so large that it reaches the umbilicus. The author did not mention one important point, *i.e.*, that immediately after delivery the uterus is in a state of anteflexion, which prevents drainage, and that this often causes septic infection. In some cases the only treatment necessary is the opening of the canal. In regard to the treatment applied to the uterine cavity, he had seen good results follow the use of peroxide of hydrogen in a desperate case, but keeping the uterus packed with gauze saturated with alcohol is probably the best method now in use. He has never seen a case suitable for hysterectomy. The intravenous injection of salt solution has proved very useful in his hands, the patients showing improvement at once. He had also employed oxygen inhalation with so much benefit that it seems to have an almost specific effect.

Dr. C. A. von Ramdohr called attention to the following points: The proper treatment of puerperal sepsis is prevention, and it is possible to prevent it. When infection takes place, the obstetrician is the infecter. Autointoxication does not exist. The differential diagnosis between sapræmia and septicæmia must be made early. *Never* use bichloride. It has been proved that when applied to the parturient canal, under certain conditions, it will give rise to acute nephritis. Whenever sapræmia is present, as indicated by fever, leucorrhœa, and the presence of retained *débris*, the latter should be removed by the curette and *one* intra-uterine douche given. Whenever there is pus-collection in the pelvis, it should be treated like any other abscess. When such a collection exists and the uterus proves an obstacle to thorough drainage, the organ should be removed, for it will always be a nidus for future disease and never a useful organ. Give alcohol in large doses: one pint of brandy in twenty-four hours. Serum-therapy will be welcome if it can give us hope. The use of the coal-tar preparations is a step backward, for they weaken the muscle of the heart. Where systemic infection has taken place, local treatment is worse than useless.

Dr. H. Vineberg narrated the history of a case of puerperal endometritis in which the patient had done well for a week when she suddenly had a chill and a rise of temperature, the chill being repeated on the following day. Abdominal pain soon developed. Upon examination, the vagina and cervix appeared intact, and the only thing which attracted attention was the large size of the uterus. Investigation showed that a portion of the placenta was retained, and the patient recovered after curettage and irrigation.

Dr. Robert A. Murray expressed the opinion that sepsis in many cases is due to neglect of the old rule to give ergot in the third stage of labor in order to secure firm contraction of the uterus. In a

large hospital and out-door obstetric practice he had followed this rule with the result that he seldom had a case of sepsis, and this in spite of the fact that many of the women were delivered amid the most unfavorable surroundings. A second dose of ergot was given if there were much bleeding. If the uterus is kept well contracted, blood-clots will not lodge there, decompose, and cause sepsis. If there was a slight rise of temperature, the finger was passed over the entire surface of the uterine cavity, and, if any foul odor clung to the examining finger, the uterus was curetted, treated like an abscess-cavity, and swabbed with alcohol, carbolic acid, or tincture of iodine to prevent further absorption of septic germs. He was glad to hear Dr. Coe mention inhalation of oxygen, which the speaker knew to be very beneficial. Alcohol should be given and also veratrum viride, which acts upon the heart when given in small doses. In general septic peritonitis he considered it useless to operate. When seen early, incision and drainage may be employed.

Dr. J. Riddle Goffe said the treatment he employs in these cases is similar to that outlined by Dr. Grandin, differing only in that he always explores the cavity of the uterus with a curette rather than with the finger, not because he fears that infection may be carried by his own hand, but for the reason that he has seen so many cases in which sepsis has been conveyed in this way; that he has made it a rule to advocate the use of the curette for diagnostic purposes, because it can be made *absolutely* aseptic by boiling.

Dr. Simon Marx thought it would be difficult to follow Dr. Grandin's advice, to curette down to the granulation layer only, in cases of putrid endometritis. In regard to the antistreptococcic treatment not being successful in cases of puerperal sepsis, although of so much benefit in surgical cases, the speaker attributed this either to the fact that in the former the infection is often a mixed one or to some influence which the puerperal state has in intensifying the poison. His experience with the serum has been most unsatisfactory and in some cases has seemed to hasten death, and he is of the opinion that the cases reported as cured by it in France and Germany were cases of sapræmia and not of septicæmia.

Dr. J. M. Mabbott called attention to the frequent occurrence of malarial fever during the puerperal state. Several such cases have been noted at the infant-asylum, and in all the plasmodium malariæ was found in the blood. The temperature fell after large doses of quinine. It was his opinion, therefore, that quinine should be given when a rise of temperature takes place in the puerperal woman, rather than resort should be had to the antitoxic treatment which, it is acknowledged, may be harmful.

Dr. W. Evelyn Porter expressed himself in favor of intra-uterine irrigation, but said that much discomfort and pain is caused by it and much damage done if it is not properly performed. These disadvantages will be obviated if a flexible rubber tube is inserted into the uterus well up to the fundus. Frequent irrigation is followed by good results. Where portions of the placenta and membranes are retained, they are more easily removed with forceps specially constructed for this purpose, than with the curette.

Dr. A. Monae Lesser also referred to the frequent occurrence

of malarial fever in puerpera, and recommended the administration of large doses of quinine and a liquid diet.

Dr. Jewett referred to Dr. Grandin's division of septic infection and said he would make three,—viz., "sapræmic," "mildly septic," and "highly septic." He emphasized the fact that the curette is permissible only when there are blood-clots and shreds of membrane in the uterine cavity, and that it is contra-indicated in purely septic cases. He was glad to learn from Dr. Noble of the beneficial effect which follows the intravenous injection of salt solution.

Dr. Grandin took exception to the statement that it is safer to examine the uterine cavity with the curette than with the hand because the former is cleaner, and said that the man whose hands are not clean enough to examine the uterus is out of place at the obstetric bed-side.—Medical News, October 16, 1897.

GREAT BRITAIN.

Hunterian Society.

Some Relationships of Indigestion.—Dr. W. H. Allchin, after considering the relationship which indigestion exhibits toward precedent and associated states, reviewed the aspects of the subject which deal with the effects upon the organism which the indigestion itself brings about, with the consequential results of which it is the cause or antecedent, as exhibited by the symptoms. The symptom-complex which may attend any form of indigestion requires to be carefully unraveled ere the real relationships of the phenomena presented are satisfactorily understood and before a reasonable plan of treatment is formulated. To begin with, there are the associated symptoms due, not primarily at least to the indigestion, but to the underlying cause of it and of them. Possibly, no doubt, the indigestion may tend to aggravate or modify these as they in turn may qualify the more strictly dyspeptic manifestations. Inasmuch, also, as the ultimate object of the digestive process is to supply the material for the tissue nutrition, it may well be that among the remote results of an indigestion, especially if it be of long duration, the general nutrition should suffer. It is needful to differentiate the evidences of this from the dyspeptic symptoms proper. After making, however, due allowance for these there still remains a most extensive and varied range of departures from sound health of all degrees of severity, which are distinctly to be ascribed to some flaw in the digestive process. The extreme diversity of these symptoms is one among other reasons which renders the investigation of the subject so difficult. But this very diversity is only what might reasonably be expected when the great extent of the organs is considered and the many different phases of the digestive function is remembered. The widest and most abundant opportunity of disturbance exists in the natural condition of things, and, the directions whence disturbance may arise being as numerous as they are, a complicated and variable manifestation is the inevitable result. It will be convenient in the consideration of the symptoms and their bearings to use the distinction of *local* and *remote*, though

it be, in some respects, an artificial arrangement and not capable of being strictly observed. By *local* symptoms is meant those which are obviously and directly connected with the digestive organs, and among the most constant are abnormal sensations. Inasmuch as the function should be performed without giving rise to any sensation after the food is swallowed it may be laid down that any conscious feeling in the course of the process is wrong. Frequently there is nothing beyond a sense of weight and oppression vaguely referred to the epigastrium or generally over the upper half of the abdomen, or this may amount to positive pain. Most variable and of uncertain significance is this symptom; strictly localized or widely diffused, relieved by pressure or acutely tender, stabbing, cutting, and paroxysmal or continuous, are but some of the qualities by which its is marked. A disagreeable taste in the mouth with a furred tongue and foul breath may be the frequent complaint of one patient, while another, equally a dyspeptic, finds no place for such in his category of ailments. Acidity and heart-burn, nausea and vomiting, uncomfortable distension of the abdomen, flatulence and the passage of wind, gaseous eructations and belchings of an acid or bitter or tasteless fluid, diarrhœa or constipation, with possibly an impaired appetite, capricious or entirely wanting, and unhealthy stools of all variety of consistency, odor, color, and appearance, complete a list the items of which in all degrees and combinations constitute the local symptoms of indigestion.

The present purpose is to refer to the two main conditions under which the various exciting causes of indigestion may be grouped,—viz., obvious structural disease of the organs and direct interference with the chemical processes taking place in the stomach and intestines; it is certainly the case that these local symptoms are present in a greater or less degree whatever may be the character of the cause, and in the more pronounced and graves structural lesions they may almost be regarded as paramount, the remoter manifestations being in the greater number of cases scarcely existent. The symptoms immediately resulting from an indigestion not connected with the alimentary canal or its glands, but with parts and regions remote therefrom, are both clinically and pathologically the most interesting phenomena connected with dyspepsia. Inasmuch as many of these are induced by affections of other systems they are not diagnostic of indigestion, and their true value in the diagnosis thereof becomes proportionately more uncertain, requiring more careful weighing for their proper appreciation. They may be the grounds upon which the patient seeks advice, and the manner in which they may be presented is often such as not to suggest, at least in the first instance, a digestive disturbance as being at the root of the matter. Since also they may, and frequently do, occur without any pronounced symptoms more obviously referable to the digestive organs, the difficulty of diagnosis becomes the greater, and not seldom the condition may be regarded as one of primary nervous cardiac or pulmonary disease, the relation to an underlying indigestion being so obscure.

Prominent among the *remote* manifestations are those which may be comprehensively designated "nervous"; and of these headache is, perhaps, the most frequent in occurrence, as in turn indigestion is probably the commonest cause of headache. As regards locality,

whether generally diffused or localized to the frontal, vertical, temporal, parietal, or occipital regions, the time of its occurrence in relation to food, its characters,—so far as words can describe it,—dull, aching, throbbing, etc., nothing specifically characteristic can be affirmed,—nothing, that is to say, which can at once enable a given headache to be set down as dyspeptic in origin, however probable such may be the case. Once, however, its cause can be so defined, some significance may be attached to these several features as helping to indicate the special factor or factors of digestion which may be at fault. But inasmuch as the laborious researches of Head have shown that these areas of pain with their associated areas of scalp tenderness are primarily, at least, to be regarded in connection with corresponding regions of pain and tenderness over the trunk rather than with the thoracic and abdominal viscera which may be at fault, the diagnostic value of headache in respect to dyspepsia becomes somewhat diminished. Nevertheless, as symptoms of indigestion, headache, and hyperalgesia are among the most frequent, while the absence of tenderness, though the pain may be excruciating, distinguishes the true megrim from the bilious, sick, or dyspeptic headache. Scarcely less frequent than the foregoing, and often extremely distressing, are giddiness and vertigo. Subjective affections of sight, such as amblyopia, colored flashes of light, muscæ volitantes, etc., or of hearing, such as tinnitis aurium, are also of no unusual occurrence in dyspepsia. The association of drowsiness with indigestion is generally familiar, but the connection of wakefulness with the same state is not perhaps so well-known. The condtion of irritability of temper, contrasting so strongly as it does with the sense of comfort and placid well-being that attends a good digestion, is closely simulated in the course of still more remote disturbances of nutrition to which undoubtedly dyspepsia contributes to the development of, although it is here sought to distinguish between the symptoms for which indigestion is distinctly responsible from those due to the later metabolic change in the tissues which are really different from the true digestive processes. Attacks of mental depression amounting to actual hypochondriasis and melancholia with delusions of suspicion are well recognized as of frequent dependence on imperfections in digestion; the very name "melancholia," a term of Hippocratic medicine, signifies the connection. It has also been made clear that outburts of mania or other psychical disturbances in those whose mental powers are perturbed are not infrequently traced to failures in the digestive process, especially if there be constipation. A close relationship between that condition of deficient nerve-power known as neurasthenia and disorders of digestion has been described, although here again the general deterioration of nervous energy may more immediately be the expression of an impaired nutrition of which a dyspepsia may be but one factor in the production. Corresponding in some measure to neurasthenia of dyspeptic origin is a general sense of lassitude and muscular weakness of like cause, though partly due, in all probability, to an inadequate removal of the results of an abnormal tissue-metabolism; and the same may be said for those violent cramps, more especially of the muscles of the calf, which not infrequently result from dietetic or digestive errors. Pains in the back and in the limbs,

usually of a dull, aching character, the former sometimes due to a loaded colon, and therefore more properly to be reckoned among the local symptoms, are commonly complained of, or a pain about the right shoulder so frequently associated with hepatic trouble and to that extent a possible accompaniment of indigestion.

Among the disturbances of the circulatory function attributable to a disordered digestion may be mentioned palpitation and all degrees of cardiac irregularity up to complete intermittence or even fainting and pains over the region of the heart often closely simulating angina. The displacement of the organ by flatulent distension of the stomach or intestines may interfere with its action; but this is not the only way in which indigestion disturbs the heart. The effects exhibited by the peripheral circulation are not less marked, as witness the flushing of the face so often following a meal even free from alcohol and of the simplest character. The coldness of the extremities is another phenomenon of the same class. Respiratory defects are much less commonly observed, though the so-called "stomach cough" is among the symptoms appreciated by the laity. While doubtless an expression of gastric or gastro-intestinal irritation, it does not usually accompany the more definite evidences of indigestion. A true dyspetic dyspnœa is less well known, but of its existence there is little doubt both with other dyspeptic symptoms or so predominating as to obscure its real origin. Along with a sense of oppression and impeded breathing is a constant desire to take a deep inspiration occurring in attacks often of some hours' duration and not infrequently at night,—a condition which recalls in its description an asthmatic paroxysm as provocation of which indigestion also takes a high place.

A connection between indigestion and affections of the skin has long been recognized, although different opinions have been held as to the degree of the relationship. For while it is very certain that an eruption of urticarial wheals, of erythema, of pruritus, or even of eczema or acne rosacea, to mention only those cutaneous affections of most frequent occurrence, may follow the ingestion of certain articles of diet, just as these and other rashes may be caused by various drugs, the actual conditions of their development is apt to be most uncertain. Not only are such results met with in but very few persons and are of nothing like universal occurrence; but they are not constant even in the same person, and they may or may not be accompanied by definite dyspeptic symptoms, such as pain, vomiting, diarrhœa, etc. Setting aside, for the moment, the question of how such eruptions are produced, it is doubtful whether they can be regarded as results of indigestion, and whether they are not rather to be considered as caused by the direct toxic action of certain ingredients contained in the articles of food with which the process of digestion is not strictly concerned. Sometimes there is good reason to believe that coincident with the cutaneous urticaria or eczema similar, if not identical, conditions are developed in the alimentary mucous membrane, and in such cases evidences of a perturbed digestion are, of course, likely to be manifested. The long-continued ingestion of certain articles of diet, such, for instance, as alcohol, may, by the injurious effect it exerts in the nutrition of the tissue, tend to produce certain skin affections, but such are not to be regarded as true dyspep-

tic phenomena, from which, in deed, they are really remote; rather are they true skin diseases predisposed to by the malnutrition which improper feeding or imperfect digestion have determined and immediately induced by some locally exciting cause. It is, on the whole, probable that the relationship of skin affections to dyspepsia is not so close as was formerly supposed, and that, in most cases, the element of idiosyncrasy has to be considered,—a circumstance that would go far to shift the responsibility for any given eruption to the cutaneous structures themselves or their trophic government rather than to place it upon a disordered digestion. The evidences of indigestion manifested in the urine are seldom the cause of actual discomfort to the patient, and beyond the familiar deposit of urates usually require an elaborate analysis for their detection, while as yet the significance of the abnormalities thus observed is only very vaguely understood. Even the precipitate of lithates, as well as of phosphates and oxalates, which may accompany very definite dyspeptic conditions, are probably expressions of later metabolic perversions rather than of direct imperfections of digestion. It is very certain, however, that the process of digestion, even in health, does exercise a very real effect upon the character and composition of the urine, as witness the increased alkalinity after meals and the variations in the amount of the nitrogenous constituents, urea, uric acid, and creatinine, with a full or diminished diet, although such bodies as these are only remotely connected with digestion and are products of tissue-waste. The kidney as an excretory organ is concerned with the elimination of some of the results of intestinal putrefaction which are absorbed into the blood in place of being voided with the bowel evacuations. The most important of these substances are the aromatic sulphates and albumoses. The former are compounds of such bodies as indol and skatol with sulphuric or glycuronic acid and alkalies, especially potash. These bodies known as chromogens are themselves colorless, though readily giving rise to pigments on the addition of acids. They are mainly, if not entirely, originally derived from the intestine, and their presence in excess may be regarded as an index of undue intestinal putrefaction. It has been proposed to ascertain the point at which excess is reached by considering the ratio of the ethereal to the so-called "preformed" sulphates or neutral salts of the alkalies, but the exact significance of their presence beyond the general fact mentioned he is unable to give. The existence of albumosuria or the very exceptional occurrence of peptonuria are indicative of a certain degree of proteid digestion, the products of which have been absorbed into the blood, and in virtue of their toxic properties have induced an irritation of the kidney and thus led to their excretion. But it by no means follows that this digestive process has taken place in the alimentary canal, for the albumins of the tissues may be so dealt with by microbic invasion. Even when their source may, with reason, be assumed to be the gastro-intestinal tract, their presence in the urine may not necessarily depend upon an error in digestion so much as some imperfection in the process of absorption from the mucous surface of the bowel. Glycosuria, oxaluria, and phosphaturia are probably but indirectly symptomatic of maldigestion, while their relation to tissue-metabolism is unquestioned. On the whole, it may be said

that the urinary abnormalities immediately due to dyspepsia are few, and interesting as they may be, and valuable as is their promise, they cannot at present be said to count for much in the actual diagnosis of indigestion, far less to afford any indication of the precise nature of the digestive flaw.

In seeking to explain these exceedingly diverse and wide-spread results of an imperfect digestion it becomes necessary to consider the structural relations of the alimentary tract with the other organs of the body and thereby to trace the functional relationships which these remote symptoms express. By two distinct structures is this connection established,—the nervous and the vascular. The blood-supply to the alimentary organs is most extensive, so much so that at any moment a third of the total quantity of the blood of the body is contained in their vessels. This amount is easily capable of great increase by conditions of central or reflex origin which lead to paralysis of the splanchnic area. The direct arterial supply from the aorta possesses—at least, as far as the stomach and intestines are concerned—a most complete series of anastomoses sufficient to compensate for any arrest or obstruction to the circulation in any one part; and this direct supply *via* the cœliac axis and inferior mesenteric vessels is further supplemented by a most elaborate system of post-peritoneal communication between the visceral and parietal branches of the aorta sufficient, as has been shown, to carry on efficiently the circulation even when the main gastro-intestinal trunks have been obliterated. Even more extensive are the arrangements for the venous return, and, although there is interposed an obstruction to the gastro-intestinal flow in the shape of the hepatic portal circulation, this is, in part, counteracted by the free communication between the gastric and mesenteric veins with the œsophageal and inferior hæmorrhoidal as well as the subperitoneal parietal venules. Accessory to this venous drainage, and also concerned in removing the digested products, is the lymphatic system of vessels and glands. Our knowledge of the innervation of the digestive organs is, in some particulars, admittedly inexact. Fibres from both the cerebro-spinal and sympathetic systems are distributed to the various structures, and in some cases have been traced to an intimate connection with the muscular and glandular elements; but concerning the paths taken by many of the afferent impulses information is much to be desired. Enough is known, however, to enable us to recognize generally the connection of the alimentary organs with the nerve-centres and thus to appreciate the reflex and referred phenomena induced in other systems. So extensive and intimate a neurovascular connection with other organs of the body at least indicates the possibility of remote symptoms being induced by digestive disturbances, suggests the channels by which they may be developed, and permits us to regard these disturbances as being in the nature of irritants to those distant parts, such irritation acting either on the nerve-terminals in the digestive tract and so reflexly affecting the functional manifestations of other organs, or by the direct transference by the blood- and lymph- currents to these structures of toxic material absorbed from the gastro-intestinal canal. By whichever of these routes the remote organs become secondarily affected there appear to be two conceivable methods in which they

may be disturbed,—either by the direct interference with the normal activities of their protoplasmic elements or by some modification of the blood-pressure in their vessels. That either of these methods is possible must, he thinks, be admitted, but proof of any one of them is at present wanting. But inasmuch as toxins are known to be formed in the alimentary canal under conditions of maldigestion and the injection of bodies possessing poisonous properties into the blood-current is well known to lead to the production of symptoms characteristic of the poison, it would seem highly probable, to say the least of it, that noxious substances absorbed from the intestine would equally determine morbid symptoms in distant parts. Doubtless to a very great extent the organism is protected against the enterogenetic poisons, and it may be—at least, in the majority of cases—that some impairment of the integrity of the intestinal mucous membrane is necessary to permit the absorption of the toxins, and this might be such as the poisons would themselves inflict on the epithelial cells. Whether when absorbed into the circulating medium these substances produce their effect directly on the issues or indirectly upon them *via* the nervous system there is little or no evidence to show, merely surmise; but, whether by either or both means, such poisons do seem adequate to explain many, if not all, of the remote symptoms which are properly referable to indigestion. That peripheral irritation of gastro-intestinal origin might, of itself, be sufficient to induce distal symptoms without the absorption of any harmful material appears possible, for the presence of intestinal worms has been known to produce such results. As to the other suggested explanation for some of the distal symptoms—viz., that they are due to variations in blood-pressure reflexly induced by gastro-intestinal states—very little can be said. Such symptoms as giddiness, vertigo, and even some dyspeptic headaches, may be thus explained, and some grounds for this may be found in the circumstance that some of these phenomena may immediately disappear after action of the bowels—a circumstance that is always attended with a fall of blood-pressure, as constipation is accompanied by the reverse. The relief from headache may follow so quickly as almost to negative the idea that the emptying the bowel has simply produced the effect by getting rid of toxic material.

Mention has already been made of the fact that definite structural lesions of the alimentary tract, however marked may be the local symptoms, are frequently wanting in any special evidences of perturbed function in their organs except in so far as they may share in the general malnutrition which the change engenders. Conversely it may be said that, while disturbances in the chemical processes taking place in the stomach and intestines may, and usually do, give rise to local symptoms, it is pre-eminently in connection with these immediate digestive imperfections that the remoter manifestations are likely to occur, and may, indeed, be the sole evidences. This distinction, if true, would be of decided value for diagnostic purposes.

Among the many features of dyspepsia that call for comment the uncertainty of its manifestations is as well known as it is remarkable. How commonly is it the case that a patient—the subject, it may be, of frequent indigestion—consumes with impunity a meal that violates in quantity or quality many of the dietetic rules he has

been accustomed to observe and has found almost essential to his well-being. "What is one man's meat is another man's poison" all are familiar with, and, also, even how often the food which is suitable to-day may disagree to-morrow or the plainest fare may provoke an indigestion. The fact that what are called errors in diet do not of necessity induce discomfort, local or remote, and with many people rarely, if ever, lead to indigestion, would seem to suggest that the *materies morbi* is less in the ingesta as presented than in the subsequent digestive processes, and is, to a great extent, independent of the actual food taken. It is to remedy this that the treatment should be directed, and, as I fully believe, often with more success than by elaborate dietetic rules.

Lastly, if we compare the precedent with the consequent relations of dyspepsia, we find, on the one hand, the causal conditions acting in most cases by inducing a perversion in the chemical processes with production of toxins and themselves determined by noxious ingesta or by motori-secretory perversions due to structural change in the digestive organs or far more often to a defective innervation; on the other hand are resulting symptoms the expressions of local perversion of the digestive function or of the distant effects due to toxic absorption or reflex irritation.—Lancet, October 23, 1897.

Clinical Notes and Therapeutic Suggestions.

Duration of Immunity after Vaccination.—According to Jasiewicz, the immunity from vaccination lasts a much shorter time in infants than is generally supposed. A study of the statistics of the subject showed a proportion of 7.35 per cent. out of twenty-three children under six years of age in whom vaccination was successfully performed. The author, therefore, recommends more frequent revaccination in childhood, and expresses the opinion that children are also protected from other infectious diseases thereby.—Journal de Clin. et Thér. de l'Enfance, July 29, 1897.

The Successful Treatment of Pulmonary Tuberculosis by the Hypodermic Use of a Compound Solution of Iodine.—Charles Wilson Ingraham, of Binghampton, states that, after five years' use in the treatment of all forms of phthisis, the compound given below has proved so satisfactory and generally applicable that he has made no alterations or additions to the original formula. It is prepared for hypodermic use only, sterilized oil being the solvent used:—

Iodine (chemically pure), gr. $\frac{1}{2}$.
Bromine (chemically pure), gr. 1-14.
Phosphorus (chemically pure), gr. 1-100.
Thymol (chemically pure), gr. 2-3.
Menthol (chemically pure), gr. 2-3.

The compound is not a simple mixture of the ingredients mentioned; the properly prepared product is the result of a series of definite chemical reactions. The characteristics of the compound are as follow: It is of a bright-cherry color, distinctly transparent, and

of a slight aromatic odor. It will keep indefinitely without undergoing any change if kept protected from light and heat. Its hypodermic injection is attended with less pain than the injection of a solution of morphine, whereas an hypodermic injection of a solution of the ingredients named in the formula, prepared in common mixture, would be attended with intense pain.

The author states that the effects of bromine-iodine compound in the treatment of pulmonary tuberculosis have shown themselves remarkably permanent, and that no patient discharged cured has had a relapse, a number having been discharged cured more than four years ago.

His report, published by the author two and a half years ago, shows nearly 90 per cent. of cures of all cases of pulmonary tuberculosis treated in the first stages of the disease, while the percentage of recoveries in the second stage of the disease was nearly fifty. These percentages were based upon twenty-one cases treated in the first stage and fourteen cases treated in the second stage,—a total of thirty-five.

The effects of bromine-iodine compounds in tuberculosis are, he states, rapidly manifested, and in curable cases the disease is quickly brought under control. A decisive gain in weight is usually manifested during the first ten days of treatment. His records show one case of laryngeal tuberculosis in which a gain of twenty pounds occurred in thirty-four days; another patient gained twenty-five pounds in fifty-six days, while a third invalid gained thirty pounds in four months.

Expectoration at first becomes more free and profuse, though it soon decreases in amount, becomes less purulent in character, while the cough is generally relieved from the first. The oil which is used as a solvent in preparing the chemical compound for hypodermic use doubtless exercises a distinct effect upon the pulmonary air-passages, promoting expectoration and reducing local inflammation. The oil, too, doubtless contributes to the increase in general nutrition.—New York Medical Journal, October 23, 1897.

The Use of Large Doses of Creasote in Phthisis.—Dr. Clifford Beale recently read a paper on this subject, and gave an account of a series of cases of incipient tuberculous disease of the lung and another series of the more chronic forms of disease. The patients had been treated with doses of pure beech-wood creasote dissolved in cod-liver-oil, beginning with 3 or 5 minims, the same amount being added to the previous dose every alternate day until a maximum of 180 or 160 minims per diem was reached. He had found that of all the methods of giving the drug this appeared to be the least objectionable to the patient. The results achieved had been highly satisfactory and in some cases most striking, the most marked effects being produced when the larger range of dose was reached. The fall in temperature, gain of weight, and general subsidence of symptoms had, in many instances, been surprising, and seemed to be more definite and lasting than the degree of improvement commonly observed as the result of hygienic treatment only. Contrary to expectation, no complaint was made by the large majority of the patients of the smell of the drug, and it was probable, from both clinical observation and chemical experiment, that the creasote was rapidly broken up in the stom-

ach, possibly forming a more stable compound, in which form it was excreted very freely and rapidly by the kidneys. Its presence could only be detected in the urine after further distillation with strong sulphuric acid. In many instances the patients passed blackened or greenish urine, but it could not be ascertained that either the quantity or chemical composition of the urine was otherwise materially altered, and there were no unpleasant symptoms attending the altered color of the excretion. Further chemical investigation was, however, necessary to explain some of the changes which the drug undergoes in the body. As a result of purely empirical use, it appeared that an amount of success was to be obtained by its employment, especially in the early cases, which was quite equal to, if not better than, the results obtained by the more specialized preparations, such as guaiacol and its carbonate, and its was evident that it could be well tolerated when dissolved in codliver-oil, and hence the painful and unpleasant methods of introduction, such as subcutaneous or rectal or tracheal injection, were rendered unnecessary. The drug was not to be regarded as in any sense a specific remedy for the disease, but rather as a valuable adjunct to the many existing methods of hygienic treatment at present in use.

Dr. St. Clair Thomson said that his personal experience was limited, and if he were to quote it it would doubtless show that every patient who had recovered or improved had taken creasote. But whether such patients recovered because they were taking creasote, or in spite of having had that drug prescribed, would be a very difficult question to answer. However, he was able to quote the much more valuable experiences which he had heard of last summer when visiting the well-known sanatorium for phthisical patients founded by Dr. Dettweiler, at Falkenstein, in the Taunus Mountains. The patients in this institution belonged to the well-to-do classes, and the resident physician had most exceptional opportunities for observing the effect of any drug. Creasote had there been given a thorough trial, and had now been completely abandoned along with tuberculin and all other specific remedies. Small doses were occasionally given, but more for their effect on the digestive system. Treatment at Falkenstein was entirely symptomatic, and general dietetic and hygienic influences were the only remedies relied on. He suggested that in Dr. Beale's cases the improvement might be due to the rest and good food which the patients obtained in the well-ventilated wards of a chest hospital. Before attributing any virtue to the creasote it would be necessary to see the results obtained in an equal number of similar cases, treated in exactly the same way, but with the creasote omitted.—Lancet, October 30, 1897.

Ichthyol in Tuberculosis.—Fraenkel extols the use of ichthyol in tuberculosis, having employed the remedy in some thirty cases. In incipient stages the cough disappears in a few days. If the lesions are more extensive it may continue for some weeks or even months. Expectoration becomes more liquid and less abundant. All the symptoms are much improved. Twenty to forty drops of a mixture of equal parts of ichthyol and water should be taken four times daily. A little peppermint may be added to disguise the taste. In spite of its dis-

agreeable odor and taste, the remedy produces no unpleasant gastric symptoms.—Medical News, October 30, 1897.

Mechanical Treatment of Seasickness.—Rawlins, an English physician, says that the elevation of the extremities will quickly relieve the symptoms of seasickness by increasing the arterial pressure, and thus diminish the anæmia of the nervous centres due to the enfeebled action of the heart. The application of warm flannel bandages to the legs and arms will increase the effect produced by the simple elevation. In this way he was able to make two ladies comfortable during a journey to India who had previously suffered seriously from severe seasickness.—Medical News, October 30, 1897.

On the Bacteriological Examination of the Stools in Typhoid Fever and Its Value in Diagnosis.—Dr. Mark W. Richardson, of Boston, concludes that the isolation of typhoid bacilli from the dejections of persons sick with typhoid fever is, in the great majority of cases, a practical procedure. With the appearance of convalescence the organisms disappear rapidly from the stools. They may persist, however, for several weeks. This fact is important as regards disinfection.

The value of the serum-test is, in most instances, greater, by reason of its simplicity and its earlier appearance. In those cases, however, in which the specific blood-changes necessary for the serum-reaction do not appear till late in the disease—till convalescence or till the occurrence of a relapse—in such instances the bacteriological examination of the stools can be of great value.

The results of Remlinger and Schneider, who declare the typhoid bacillus to be a ubiquitous organism, could not be confirmed by the writer.—Boston Medical and Surgical Journal, October 28, 1897.

A Sign of Cardiac Failure.—Henry Jackson, of Boston, calls attention to one of the signs of cardiac failure which is of great import, though it meets but little notice in the articles upon this condition,—namely, a discrepancy between the rate of the arterial pulse and the rate of the heart-beats. He has observed in many instances that in cases of extreme cardiac weakness the pulse was very slow, intermittent, and irregular, while the heart was rapid, and refers not to cases in which it is extremely difficult to count the pulse, as is always the case when the pulse is irregular, especially when the rhythm of the pulse is irregular, but to cases in which the most accurate taking of the pulse by trained individuals does not show a rapid pulse-rate, yet examination of the heart shows that its action is extremely rapid. —Boston Medical and Surgical Journal, November 4, 1897.

Treatment of Pertussis.—Dr. F. Theodor, of Königsberg (Archiv für Kinderheilkunde, vol. xxiii, Nos. 4 and 5), takes rather a gloomy view of the chance of our accomplishing more in the treatment of whooping-cough than palliation, and we think that most practitioners of experience will be disposed to agree with him. One after another he has tried the vaunted specifics, but in vain. He speaks particularly of the vaccinative treatment. It is an old notion, and one apparently well founded, that the vaccination of a child tends to protect it for a time against the infection of whooping-cough. Doubtless the step from this idea to that of treating the disease, after it has

manifested itself, by means of vaccination was long ago taken. At all events, vaccination as a remedy for whooping-cough has lately been brought forward by Pestalozza, whose reports of brilliant results have been followed by equally favorable reports from a number of other observers. But Theodor says that he has not been so fortunate with this treatment. He has tried it in ten cases, and without the slightest result in any of them. He gives brief notes of the cases of four children who had not before been vaccinated, in whom, therefore, he remarks, the most striking results should have been witnessed. The pocks formed regularly and underwent gradual desiccation, but the whooping-cough was not in the least affected.

One of these four children, a boy 3 years old, was vaccinated at the end of a week after his coming under the author's care for whooping-cough. Six insertions were made on the left arm. In eight days there were four pocks and the vaccinal fever had made its appearance, but the child's condition was unchanged. Four weeks later the paroxysms began to grow fewer and gradually ceased. The second child was a very weakly one, 2 years old, whose vaccination had been deferred on account of previous disease. It was taken with whooping-cough on the 1st of November, 1895, and had epistaxis and vomiting of blood. On the 10th of the month the child was vaccinated successfully by the author. The whooping-cough, which was very severe and gave rise to facial paralysis, was still in full force on the 10th of the following month, and it was only slowly that the child recovered. The third child, 2 years old, had been under treatment for whooping-cough for four days when it was vaccinated. On the fifth day after the vaccination the formation of the pocks was discernible, but on that day the child died in convulsions. The fourth child, 9 months old, had whooping-cough with vomiting and convulsions. It was vaccinated successfully, but there was no mitigation of the whooping-cough until after about six weeks, and it was eight or ten weeks before recovery was complete.

The author says that since these experiences occurred he has gone back to his old way of treating whooping-cough. For children under a year old he employs antipyrin, for those between a year and two years old he uses bromoform, and for older children he prescribes the wearing of a mask wet with a 10- or 20-per-cent. solution of carbolic acid. Perhaps, he thinks, these measures lessen the number of the paroxysms, but assuredly they do not shorten the course of the disease. Hygiene, he thinks, should take the first place, and possibly the only one, in the treatment of whooping-cough. So long as there is any catarrh, he would not allow the child to go out-of-doors unless the weather was so fine that it was warmer and pleasanter in the open air than in the house. With all this, he attaches great importance to pure air in the rooms and to a warm liquid diet.—Editorial, New York Medical Journal, October 23, 1897.

Permanganate of Potassium and Opium Poisoning.—Reginald Nitch-Smith, of London, relates the following case of accidental opium poisoning with successful treatment:—

"A male adult, aged 35 years, well nourished, gave, on his recovery, the following history: 'At four o'clock this morning I took two tablespoonfuls of laudanum in mistake for black draught, after

which I went to bed, and on being called at seven I thought something must be wrong as I felt so drowsy. I examined the bottle and found I had made a mistake. I then took the proper black draught, got up, and went for a walk. On passing the hospital I felt so very sleepy that I thought it best to come in for treatment.' When I saw him, four hours after he had taken the opium, the patient was asleep on one of the seats in the surgery. I immediately roused him, gave him some strong coffee and an hypodermic injection of caffeine, 3 grains. Two porters were instructed to walk the patient about. His pupils at the time were contracted and failed to respond to light; the mouth was dry and the tongue coated; the skin was cold and clammy. The pulse was 108 and feeble, respiration was somewhat labored, and the muscles were relaxed. He could only just be roused by loud shouting. Two more caffeine injections were administered with no beneficial result. I now decided to try permanganate of potash, which I gave in the form of the liquor, 4 drachms. As a result, there was slight improvement. Soon after I again gave him 4 drachms, thus making in all one ounce—4.8 grains. Fifteen minutes later the patient vomited a large quantity of black fluid. From then his recovery was rapid and complete. He was, as is usual in these cases, admitted into one of the medical wards and detained for forty-eight hours, my instructions to the nurse being to watch the patient closely and to administer nourishment every three hours. On testing the urine it was found to be normal. There was no meconic acid. It will be seen that the draught taken by mistake contained 33 grains of opium or 3.3 grains of morphine.

"Dr. William Moor, of New York, ascertained that 1 grain of permanganate of potash oxidizes 1 grain of morphine. With such undisputed evidence before us it is surprising that such a reliable and easily attainable antidote for opium poisoning does not find a prominent place in text-book on poisons and their treatment. The important point in this case is that the permanganate of potash had its desired effect even after five hours had elapsed from the time of taking the poison."—Lancet, October 30, 1897.

Enforced Hyperæmia of the Apices of the Lungs.—Acting upon the suggestion of Rokitansky, that tuberculosis and mitral insufficiency are incompatible because of the unusually high uplmonary hyperæmia which the latter disease produces, Jacoby (La Médecine Moderne, September 22, 1897) has made an attempt to produce an artificial congestion of the apices in tuberculous subjects, hoping thereby to assist the body to overcome the invading bacilli. The patient is placed in a recumbent position with the shoulders lower than the hips, and the head slightly raised. A rubber jacket is worn which fits so snugly at the waist, neck, and arms, as to be water-tight, but which has some fullness over the upper part of the chest. At the upper part of the jacket there are several rubber tubes about the size of the little finger, and so directed that when streams of water are forced through them, the water will strike the chest-wall in front and behind the clavicles. At the waist of the jacket is an escape-pipe. To provide for the comfort of the patient, the back of the garment contains a couple of air-cushions. From a reservoir, which is constantly heated by an alcohol-lamp, water is pumped with considerable

force through the tubes. The shock of the stream against the chest-wall, as well as the heat, produces a degree of hyperæmia in the region of the apices sufficient, according to the writer, to materially benefit the patient. Of the twelve patients so treated, cough and expectoration were evidently benefited in nine. In one patient the cough was increased. In two instances it was necessary to give up the treatment on account of the cerebral congestion produced, due, according to Jacoby, to the fact that these patients were not given sufficient time in which to accustom themselves to the new conditions. Treatment should not exceed thirty minutes, and should be administered twice daily. To assist in producing apical hyperæmia, the patient should spend not less than six hours every day in a recumbent position with the hips and legs elevated above the shoulders.—Medical News, October 30, 1897.

The Surgery of the Stomach.—Ewald (Centralblatt für Innere Medicin, September 25, 1897), of Berlin, read before the recent International Medical Congress a paper on this subject, which his large experience renders of great interest. The prognosis of operation upon the stomach has definitely improved, although there is still a marked difference between the results as reported by surgeons and physicians. He had had under observation in the past two and a half years 29 cases of gastro-enterostomy, 17 cases of resection, and 22 cases of gastrostomy. In most of the cases the condition dealt with was carcinoma, but there were three cases of benign stricture of the pylorus. In all but three cases the immediate operative result was perfect. The following were the final results: 26 gastro-enterostomies, with 16 deaths, or 62 per cent.; 13 resections, with 9 deaths, or 69.2 per cent.; and 22 gastrostomies, with 12 deaths, or 54 per cent. mortality. These results are more unfavorable than those reported by surgeons, especially those from Mikulicz's clinic. But the surgeon, says Ewald, often regards a survival of the operation as a cure.

The limitations of the indications for operation, which are very variable, cause the statistics to vary; for example, the exclusion of manifestly unfavorable cases, which improves the statistics. The principal reason for failure lies in conditions which are beyond the surgeon's control. Cases often present insurmountable difficulties.

For the prognosis the following factors are important: (1) the position of the tumor on the stomach-wall and the extent of surface involved; (2) the extent of metastatic involvement of other organs; (3) the extent of cachexia and consequently diminished powers of absorption and assimilation after the operation. Before opening the abdomen one can form no idea of the position and relations of the tumor. The so-called early diagnosis of carcinoma by analysis of the gastric secretion has not proved of value. The increase in the lactic acid appears, as a rule, later than the time the tumor first becomes palpable. Without the palpable tumor the diagnosis can only be extremely doubtful. We operate earlier at present than formerly, only because we make up our minds to operate, as a rule, sooner. The possibility of early operation depends entirely upon early recognition of the tumor. Gastrostomy is little more than a method of producing euthanasia. Cases of carcinoma of the œsophagus should

be supported as long as possible by feeding through œsophageal tubes or per rectum, and gastrostomy attempted only when the body-weight begins to diminish to the danger-point.

In cases which apparently present favorable conditions for operation, the prognosis is always doubtful, and interference should be advised only with a full understanding of this fact. The prospects of a cure are hardly 25 per cent. and of improvement not more than 50 per cent.

For every possible reason, cases which seem favorable should be brought to operation at the earliest possible moment.—Boston Medical and Surgical Journal, October 14, 1897.

Sewage-farms and the Public Health.—Great progress has recently been made by a number of American cities in the methods of disposing of garbage, but few, if any, have yet attempted to deal rationally with the question of sewage disposal. As a rule, the easiest and apparently most economical method has been adopted, with the result that beautiful streams and waterways are contaminated to a degree which renders them a menace to the health of the communities along their banks. The system of "sewage-farms" which utilizes to the best advantage the vast wealth of fertilizing material contained in the refuse of urban life, returning it, as it were, to the soil from whence it came, and preventing it from ultimately being lost in the depths of the sea, is the most practical method of dealing with the question.

Theoretically, many objections may be raised against this system which would be sufficient to condemn it, were it not for the fact that it has been tried, has proved to be unobjectionable, and is now in use in a surprisingly large number of transatlantic cities. For instance, England has fifty large sewage-farms, and more than one hundred smaller ones. France and Germany have not adopted the system to the same extent, but it is rapidly growing in favor. Berlin, Dantzig, Breslau, and Freiburg are the most important cities of Germany that have adopted the system. From an article read by Dr. Theodore Weyl before the Berlin Medical Society we learn that Breslau has had a sewage-farm in operation since 1559, while the city of Edinburgh has used one farm for the disposal of all its organic refuse during one hundred and fifty years.

The most salient objections raised to the system are: that the sewage-farms will cause an intolerable stench; that the earth will become saturated after a short time, and necessitate the employment of constantly widening areas appropriated to this purpose; and that sewage-farms are likely to be an excellent culture-ground for the germs of infectious diseases. Dr. Weyl discusses these various objections, and answers them in a most convincing manner. Practically, the odors emitted are of no consequence. An English Parliamentary Commission, appointed to investigate the subject, reported through its expert, Dr. Carpenter, that the sewage-farm of Norwood, in the vicinity of London, is so free from objections of this nature that a favorite promenade leads directly across its fields. Colin investigated a complaint about a sewage-farm on the Seine, and found that the odor was due, not to the sewage, but to chemical works located near by. Incidentally the fact was brought out by this investigator

that schools had been established on the sewage-farms, and that there was not an unusual amount of sickness among the pupils in consequence. In regard to the saturation of the soil and the failure of the mineral constituents to neutralize the organic substances, the fact that the city of Edinburgh has used one sewage-farm continuously for so long, and that neither experience there nor at Dantzig, nor Berlin, supports the assumption, is sufficient answer to this objection. The famous English hygienist, Corfield, confirms the observations made at Berlin and Paris, that only the soil of badly managed sewage-farms can possibly become saturated. The character of the country which it is purposed to devote to one of these farms must be carefully considered, in order that efficient drainage may be obtained.

The fear that these farms may become a source of disease seems absolutely unfounded. The medical officers of the English commission above referred to, through Dr. Littlejohn, deposed that in the year 1865-'66, when cholera raged in Edinburgh and London, the inhabitants of the respective sewage-farms remained free from the disease. When Paris undertook the first sewage reform, the owners of villas in the vicinity of the purposed farms opposed their establishment, whereupon the French government appointed a commission of investigation, which published very elaborate reports. One of these was compiled by Bertillon, and in it was compared the mortality of the *arrondissement* in which the sewage-fields were located with the neighboring *arrondissements*. On the sewage-farms, taking the average for several years, six or seven persons per thousand died annually of typhoid fever. The same ratio, seven per thousand, held good for the other localities. The same was true in regard to deaths from diphtheria. The French military surgeon, Vallin, found that the mortality from typhoid among the garrisons of southern France —namely, at Marseilles and Montpellier—was, respectively, fifty-six and fifty-seven per thousand. For the same number of soldiers in northern France—namely, in Arres and Douai—it was five and thirteen per thousand. In northern France sewage is disposed of by spreading it upon the fields as in the time of the Celts, and in spite of this rather barbaric method no unfavorable effect has been observed.

The sewage-farms of Berlin are the largest in the world. Statistics have been preserved relative to their sanitary condition, extending over a period of fifteen years according to a system elaborated by Virchow. These statistics show that the inhabitants of sewage-farms and their neighbohood maintain an average health in advance of that of Berlin. Moreover, mortality among children living upon these farms has been less than that among children in the city. As to dysentery, intermittent fever, measles, and scarlatina, the percentage of sickness and of death has also been lower on the sewage-farms. Moreover, Professor Virchow affirms that in no instance could cases of typhoid fever be ascribed to infection from these farms except in instances in which the patients had drunk the sewage-water.

The vegetables and various products of these farms are not only used for food by the people who occupy them, but are sold in the markets of the neighboring villages and towns. Even lettuce and

celery have not been charged with having conveyed disease.—Editorial, Medical News, November 6, 1897.

The Incompatibility of Antipyrin and Sodium Salicylate (in Powder Form).—In a letter William J. Robinson, of New York, calls attention to the fact that antipyrin and sodium salicylate cannot be dispensed together in powder form; immediately, or within a short time, liquefaction takes place, and when the powders reach the patient he is likely to find no powders at all, but only thoroughly-soaked pieces of paper. Though for practical purposes it is immaterial whether the change is of a chemical or of a purely physical nature, it is his opinion that the liquefaction occurs in virtue of a true chemical reaction. Helbing, in his "Modern Materia Medica," says: "The reaction of sodium salicylate and antipyrin, sometimes stated to be the result of a chemical change, has been decided, by careful research, to be merely the result of deliquescence, the salicylate acting as a carrier of moisture to the more soluble antipyrin (spica)." To this statement the author is unable to agree. Sodium salicylate is permanent in the air,—*i.e.*, it does not attract moisture; nor is antipyrin *more* soluble. Rather the contrary. Antipyrin is soluble in 1 part of water, while sodium salicylate is soluble in 0.9 part of water. Nor does sodium salicylate contain any water of crystallization which might be liberated during trituration and act as a solvent for the antipyrin (as is the case with many salts).

The subject of the incompatibility of the two above-mentioned drugs was recalled to my mind by an occurrence which took place a few days ago.

A physician was called in to a patient suffering with acute articular rheumatism: the fever was very high, and the pains were excruciating. The doctor prescribed powders of phenacetin, antipyrin, and sodium salicylate, and the druggist was asked to make them up in a hurry. It was a damp evening, and when the medicine was brought to the patient there was *not a particle of powder* left, only a box of wet papers. The druggist was asked for an explanation, but he said that it was none of his business, that he made up the prescription as the doctor wanted, and if anything was wrong they should apply to the latter for information. They went to the doctor, he was out, and another physician was sent for. He relieved the patient by an hypodermic injection of morphine and prescribed capsules of phenacetin and salol; he was asked to take further charge of the case. Thus, non-familiarity with the important, but sadly neglected, subject of incompatibilities lost the physician a good family.—New York Medical Journal, October 30, 1897.

Neurasthenia and Its Treatment.—Dr. Beverly O. Kinnear argues that this disease is due to hyperaction in one portion of the nervous apparatus and in enfeebled action in the muscular and nutritive nerve-centres, the latter being due, in the first place, to one or more of the originating causes set forth, and, secondly, to undue stimulation by the forcing of the blood in excess into the already weakened cerebro-spinal system. He also advocates a treatment which has been proven to be effective in a large number of his cases.

To insure normal distribution of the blood and to supply oxygen

to the exhausted nerve-centres and to all the organs and tissues of the body, Kinnear recommends (1) the internal administration of oxygen by inhalation, (2) the use of cold over the spine, and (3) those forms of electricity which are known to excite the nutritive processes.

During the past sixteen years the author has made more than eight thousand personal applications of cold to the spine, and in a variety of diseases. The first effect of the spinal ice-bag is to dilate the arterioles all over the body, if applied from the fourth cervical to the last lumbar vertebra. But in nearly all cases of neurasthenia there is cerebral hyperæmia; consequently the bags should only be applied from the fourth dorsal to the last lumbar vertebra. By this method the arteries may be dilated in the lower body, and through this dilatation the excess of blood is drawn from the brain and internal organs, as well as expelled from the spinal centres locally, over which the cold application is placed. This treatment Kinnear has used without drugs many times, with excellent and permanent results.

Added to these applications, however, he found that the proper inhalation of a pure form of oxygen, when properly combined, will insure a more rapid progress toward recovery than by cold over the spine alone. The formula which has been found most efficacious, and which has been most widely commended by all authorities upon the use of oxygen, is composed of 2 parts of oxygen, 1 of nitrous monoxide, and 1 per cent. of ozone. This is the standard of the London Oxygen Hospital, and it can be obtained fresh from leading druggists.

It is most important to use oxygen for therapeutic purposes thus combined and prepared, because pure oxygen is so dense in its specific gravity that the arterioles will not absorb it unless combined with a gas of lighter specific gravity; and ozone is required to keep it fresh.

The fact that the capillaries will not absorb pure oxygen alone has been demonstrated by confining small animals in hermetically-sealed tanks containing an atmospheric of pure oxygen. They rapidly die of asphyxiation.

Furthermore, commercial oxygen is never free from deleterious products, and should never be inhaled. The inhalation of oxygen has been noted by many observers to increase the appetite and materially aid the general nutrition, and by its action upon the pneumogastric and phrenic nerve-centres it expands the lungs and re-energizes the diaphragm into vigorous action; and this deepened respiration will sometimes continue for hours after its inhalation. The general glow which follows its use, and the sense of increased vigor which is a sequel to the inhalations, he believes, can only be explained as due to an increase in the activity of all the nutritive metabolic processes.

He warns against too long administrations of oxygen in neurasthenia or any chronic disease. Two or three inhalations when the stomach is empty, three times a day,—morning, afternoon, and evening,—are sufficient in the twenty-four hours. The lungs are first emptied by strong expiration, the tube is then placed in the mouth, and while the nostrils are closed the oxygen in drawn by long and

deep inspirations into the lungs; and, after retaining the inhalation as long as possible, it is slowly allowed to escape from the nose. There should be an interval of two minutes between the inhalations. Pure oxygen should only be used for local application externally, to stimulate sluggish granulations, etc.

In all forms of disease where there is difficult respiration and the condition cyanotic, the inhalation of oxygen is the remedy *par excellence*. The cold applications should be made over the spine for half an hour three times a day if the patient does not find them unpleasant, but, if so, morning and evening, or even once a day, will suffice.

Static electricity may be combined with the use of the ice-bag and oxygen inhalation, if found necessary.—Therapeutic Gazette, September, 1897.

The Treatment of Fracture of the Lower Jaw.—Hansy (Centralblatt für Chirurgie, No. 40, 1897) reports three cases of fractured jaw in which he applied, with success, a strong wire around all the teeth, and twisted both ends together in front of the symphysis. To prevent this ligature from slipping, the anterior and posterior parts were fixed by loops of very thin wire, such as is used for flowers, which were passed between the teeth and firmly secured. The advantages claimed for this method are that the patient is able to separate the jaws without disturbing the fracture, and to chew soft food. The patients treated by the author were able to retain the metallic splint until consolidation had been effected, and did not suffer from any of the troubles—swelling of the gums, loosening of teeth, ulceration of the tongue—which have been regarded as serious objections to the use of the wire ligature. This plan of treatment is, of course, inapplicable to edentulous subjects.

Mahe (Revue de Chirurgie, October, 1897) advocates very strongly the use of Kingsley's apparatus in cases of fracture of the lower jaw. This consists of a dental splint of vulcanite rubber, to which are attached two curved arms of steel, which, emerging from the mouth, extend over the cheek to the angle of the jaw on either side. These are fixed by a sling of gauze passing beneath the chin from one arm to the other. This apparatus, which was devised about twenty years ago, has been applied with complete success by Mahé who states that by its simplicity and the ease of its construction, by the slight amount of discomfort it causes, by the freedom it affords to the temporo-maxillary articulation, and, consequently, the possibility it permits of an almost normal alimentation, and by the perfect apposition of the fragments it assures, undoubtedly constitutes a method of rendering marked service in most, if not all, of the cases of fracture of the lower jaw.—British Medical Journal, September 30, 1897.

Rupture of the Internal Carotid Through the Nasopharynx.—Schmiegelow mentions an accident which happened in the practice of another surgeon, and one who has many times performed, without bad result, the simple operation which brought on a fatal hæmorrhage in the instance mentioned. The patient, a boy aged 12, had adenoids, and, except that the lad was of scrofulous diathesis, the

case was absolutely uncomplicated. No anæsthetic was used. While the operator was scraping the right wall of the nasopharynx with a Gottstein ring-knife, there was a sudden gush of blood which proved uncontrollable, and the patient died within a few minutes. At autopsy it was found that the internal carotid artery had been ruptured by the manipulations.—Medical News, October 16, 1897.

Treatment of Epilepsy.—Flechsig advises opium, beginning with 5-6 grain daily, distributed in three doses, and steadily increased until 4 or 5 grains daily are administered. At the end of six weeks the opium is stopped, and bromides are used,—in large doses, 75 to 100 grains a day, for a period of at least two months. The fits generally yield to the first dose of bromide. The treatment should be adopted only in chronic intractable cases of epilepsy in which the administration of bromides alone has failed. The contra-indications are the *status epilepticus*, plethora, and cerebral focal lesions.—Medical Record, November 6, 1897.

Headaches.—Dr. Dercum declares that headaches, if due to pelvic disturbances in the female, are usually located at the top of the head and are accompanied by soreness of the scalp; if due to digestive disturbance, they are occipital or frontal; if to disease of the pharynx, they involve the entire vault, as though the pharynx were expanded and extended upward; if due to migraine, they are usually one-sided, local, and accompanied by soreness at the supra-orbital foramen; if to eye-strain, generally superciliary or frontal, sometimes occipital; if to disease of the nares, between the eyes and extending backward.—Medical Record, November 6, 1897.

Cysts of the Vermiform Appendix.—Dr. E. E. Montgomery states that cysts of the vermiform appendix have, until recently, received but little attention. They are, without doubt, inflammatory in origin, the inflammation resulting in destruction of a portion of the mucous lining and obliteration of the corresponding canal. The secretion of undestroyed portion of membrane forms a cyst. These cysts are usually of small size, although Virchow has reported one which attained the size of the fist. Van Hook reports thirty-two cases. The writer removed one from a pregnant woman, in which there was marked hyperæsthesia over the right inguinal and lumbar regions, more marked, indeed, than seemed justified by the local lesion. The patient miscarried the following day. Microscopical examination disclosed staphylococci in the contents of the cyst. It has always been a question as to how much the symptoms were due to the appendiceal lesion and how much to the occurrence of an attack of grippe. Generally cysts give rise to no symptoms. The case reported was operated upon for a number of uterine growths which were producing so much discomfort as to demand operative interference. The growths were of the extramural variety, one projecting beneath the peritoneum, another downward into and filling up the pelvis. This tumor had to be pushed over to reach the cervix, which was situated over an inch above the symphysis. The patient, though 52 years of age, still continued to menstruate, and of late much more profusely. Panhysterectomy was done. While making the peritoneal toilet, after removal of the growth, a mass fell into the pelvis. Ex-

amination disclosed that it was a tumor of the appendix. It was drawn out and the bowel incised at its upper margin, permitting the removal of the cyst without opening the intestinal canal. The muscular wall and peritoneum were closed by a continuous catgut suture. The patient recovered uneventfully. The cyst, when fresh, was five and one-half inches long, four and three-fourths inches in its largest circumference. It has not been opened. Its contents are apparently thin and watery.—Journal of the American Medical Association, July 24, 1897.

Reprints Received.

The editor begs to acknowledge, with thanks, the receipt of the following reprints:—

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Selections from Society Proceedings.

GREAT BRITAIN.

British Medical Association.

A Discussion on Turbinotomy.—The Objects and Limitations of Turbinotomy.—Greville MacDonald stated that removal of larger or smaller portions of the turbinated bodies, whether involving only hypertrophied portions of the mucous membrane with the erectile tissue or actually the bony substance supporting the latter, had been practiced more or less by specialists ever since they first encountered, individually, those striking cases where the operation would obviously and necessarily cure the patient of whatever symptoms might be attributable to such pathological causes. But yet, curiously enough, it was only quite lately that the word "turbinotomy" had become one of daily use. And this indication of an enlarging interest in the subject inclines one to ask the question as to what is implied by the term, why it should have only lately excited divergence of opinion, and whether any substantial improvements in our methods of diagnosis and operation may be supposed to have induced or resulted from this new departure.

"As far as I am aware, the subject has excited but little interest either in the United States or Canada, beyond, of course, such points as have always been recognized by every specialist; but in London, at any rate during the past few years, wherever two or three laryngologists have been gathered together, the word 'turbinotomy' has always excited a deep interest. To one man the inferior turbinal is regarded as a structure to be sacrificed in the interests of such members of the public as are not cursed with atrophic rhinitis; while to another man the word 'turbinotomy' is like the red rag to the bull, and the inferior spongy body is so sacred a member of the physiological system that disaster in some form or another ought to overwhelm, if not the patient himself, at least the misguided specialist who dares use the spokeshave.

"Now without being dogmatic, and without pretending to offer anything new on the subject, I think, for the sake of the interesting discussion involved, that it may be serviceable to point out, roughly speaking, the objects and limitations of operations involving the removal of portions or the whole of the inferior turbinated body. I suspect that the discussion will prove of the greatest interest, and more profitable than is often the case, from the fact that it will partake of an international character. Possibly the Canadian practitioners are more familiar with the views of American specialists than we in England, but I am extremely anxious to hear the views of the laryngologists on this side of the Atlantic.

"I am leaving out of my remarks all operations on the middle turbinal, seeing that it is not usual to include this structure when using the word 'turbinotomy,' and also because it would lead us into regions too vast to be even prospected in the time at our disposal.

"Resection of the inferior turbinal in part may be required for the relief of (1) obstruction to respiration, (2) for the relief of the various neuroses, and (3) for the relief of a troublesome and rather uncommon form of catarrh. For such affections or symptoms removal of those large cauliflower or ribbed masses, occupying more specially the anterior and posterior extremities of the bone, has been among the earlier triumphs of rhinology. I say triumphs advisedly, for the not infrequent association of the posterior hypertrophy with adenoids, which latter the general surgeon now claims as falling within the pale of general surgery, enforces a real justification for the special study of nose disease, seeing that it is precisely in such instances of association that the general surgeon will find himself at a loss to understand why his operation with the postnasal curette or forceps has failed to restore nasal respiration. For the grosser of such hypertrophies, the incandescent or cold snare has always been the chief method adapted to operation, while the smaller of such enlargements are sometimes sufficiently treated with the electric cautery.

"But there are cases where specialists of not very wide experience may fail to give all the relief they had hoped for by such methods. This generally arises from the fact that they overlooked the large masses often concealed in the concavity of the overhanging bone. We sometimes see enormous masses in this region, which can be turned out with a probe and either cut off with scissors or removed piecemeal with the snare. The latter is often preferable, on account of the less hæmorrhage it entails. I am somewhat anxious to emphasize this concealment of the much hypertrophied tissue for the sake of recording my experience that in nearly all such cases—and I have had my share of experience with them—a cure can be effected without interfering with the bone.

"These cases, moreover, have appeared to me to be more often associated with asthma, as the cause of the neurosis, than are other affections of the nose; so that for this reason alone it is incumbent on us to inquire into every method advocated for the relief of the obstruction in the inferior meatus.

"But there are undoubtedly cases where the snaring or cauterizing of the mucous membrane is not sufficient to insure the desired relief. In such, respiration through the fossæ is not necessarily

obstructed, and the specialist's attention is often drawn to the condition only by the accumulation of ropy mucus or muco-pus in the inferior meatus which the patient experiences the greatest difficulty in removing from the nose by the ordinary methods. He is constantly wiping the nose, being unable to blow the accumulations into the handkerchief. On examination we find the inferior meatus blocked with the accumulations.

"Of course, the same condition may obtain in the ordinary forms of hypertrophy or chronic engorgement of the erectile tissue. But in the special class of cases to which I am now referring we have neither one nor other of these conditions. The mucus, in fact, is imprisoned in the concavity of the inferior turbinal, and, secondarily, in the portion of the inferior meatus internal to the turbinal, by the relatively large size of the bony structure of the turbinal. The free border of the latter may be almost or quite in contact with the floor of the nose, and in a few cases we see adhesion of the anterior part of the body to the floor beneath. This results in the formation of a pocket with or without a small opening in its anterior portion. Into such pocket the patient is constantly forcing the accumulations of mucus in his endeavors to clear the nose, the result being that he is never free. In one case, the wife of a medical friend who objected to operation, I was enabled to instruct her how to find, with a fine nozzle attached to a syringe, the small anterior opening into the pocket, and thus to wash the accumulations backward. As soon as relief was thus obtained, it appeared to become permanent, and she had no further trouble from an affection which must have persisted for the greater part of her life without inconvenience, until some catarrhal attack made her realize that something was amiss which prevented spontaneous recovery. In this case there was no actual hypertrophy, and in most of such, I believe, the fault lies in a structural malformation rather than a pathological condition. Just as in the many and extraordinary malformations of the septum with which we have so often to deal, the fault appears to have originated in sort of error of co-ordination in the relative extent to which the septum and the vertical diameter of its containing chamber have arranged for their individual extension, so the inferior turbinal appears to have attained a size which would have been suitable only in a nasal fossa with a greater vertical capacity. But I have never seen any case where the bony structure appeared to be too large in the posterior regions of the fossæ, any more than deviations or hypertrophies of the septum are to be found in the regions brought into view with the postrhinal mirror.

"In these cases the only treatment that can be considered satisfactory is the paring off from the free border of the bone as much of its substance as will secure a free passage of air and mucus. This can usually be attained with scissors or the combined use of scissors and snare, as practiced by Dr. Dundas Grant. But it is only the anterior portion that ever needs such treatment, in my experience, and I have never seen any case where it was necessary to do more than this. I have never been tempted to remove large portions of the inferior turbinal, beyond the masses of hypertrophy with which we are all so familiar. And, although I have heard the views of those who advocate the larger operations on the inferior turbinal for the relief

of obstruction to respiration or for the removal of certain neuroses, yet, while amply convinced of the feasibility of such operations and of the relief they may afford, while even admitting that no appreciable harm may result in most cases, yet, let me repeat, I have, for my part, not seen the cases where the desired relief could not be acquired by milder measures. The great hæmorrhage and the frequent necessity for plugging render the operation graver than almost any other in the nose; and we have yet to see whether, in the course of a few more years, we shall not see, in these patients, definite evidence of chronic inflammation of the larynx, etc., resulting as a consequence of the removal of what may be justly described as the secreting gland or organ of the nose.

"Some years ago I spent a good deal of time in a series of experiments on the functions of the nose, more especially with the view of ascertaining the relative amounts of water and carbonic anhydride given off from the nasal mucosa, as well as the rise in temperature on passing a measured quantity of air through the fossæ under varying physical conditions. Among these experiments were some with the object of ascertaining any differences in the exudations when the erectile tissue was collapsed with cocaine.

"Roughly speaking, I may say that the conclusions were these: that, while the temperature to which the air was raised was not materially altered, the amount of water given off sunk to half and sometimes as much as a third, from the diminished pressure and lessened blood-supply to the mucous glands. So that, although there must be other glands in other regions of the fossæ similarly affected by the cocaine, yet, seeing objectively the enormous degree of collapse of the erectile tissue when affected with the drug, and knowing that this must depend upon the blood-supply, I think it is not assuming too much to infer that the removal of the whole of the inferior turbinal must lessen, to a very grave extent, the amount of mucus secreted by the nose. In the second place, we are all familiar with the condition to which a chronic collapse of the erectile tissue conduces. We are familiar with this in a mild degree in anæmic individuals, in which it is not uncommon to see a slight degree of pharyngitis sicca, and a certain amount of chronic laryngitis. To a graver degree, we are even more familiar with it in cases of atrophic rhinitis, where the inferior turbinals have often as completely disappeared as if they had been dealt with by the spokeshave.

"Granted such points,—which, indeed, are among the most elementary of the clinical facts we specialists insist upon,—it appears to me to be doubtful whether we are wise in resorting to an operation which will deprive the patient of the least bit more of his erectile tissue than is absolutely necessary. It has been argued that the patient can do as well without his turbinals as without his tonsils, but the statement is obviously not justified. In the case of the tonsils there are presumably innumerable other organs in the body which fulfill a similar office, and are able for a little more work if some perform less. But, in the case of the nose, it seems hardly likely that the remainder of the mucous membrane could supply all that is lost by the removal of so large a portion as that in question.

"And, in conclusion, let me assert that I am fully aware that I

have indicated only one side of the question, and I await with the greatest interest the other papers on the subject, and the discussion which I trust they will elicit."

Some After-effects of Turbinotomy (Spokeshaving).—T. W. Carmalt Jones said: "I do not purpose saying anything about the method of operating or about the instrument, for I think that would only be a waste of time.

"The operation was first tried in the hope of relieving most distressing tinnitus aurium in a case where both inferior turbinals had been cauterized with a satisfactory, but only temporary, result. After spokeshaving the tinnitus ceased, but did recur occasionally, but then only very faintly, and when the patient was overtired or below par.

"My friend, Dr. P. H. Abercrombie, wrote to over 100 patients who had been spokeshaved, asking them to answer a number of questions, and received answers from about 60, and from these answers and the information derived from them and the consequent more careful watching of the patients after operation, I have noted some after-effects which I had not contemplated when planning the operation. It appeared that tinnitus was relieved in 60 per cent. of the cases. In some of these cases it did not recur while they were under observation.

"The deafness accompanying the tinnitus was relieved when the tinnitus stopped, and the hearing power, when tested by the watch, was markedly increased. I am convinced that the unhealthy posterior extremities of the inferior turbinals act as foreign bodies at the openings of the Eustachian tubes and that, by keeping up a constant irritation, they are responsible for Eustachian catarrh. It is easier to pass a catheter or to perform politzerization after their removal, and some patients who could not use the Valsalvan method on themselves before could do so afterward, and by using the aural tube it was found that the air passed into the tympanum on inflation much more freely, and that the abnormal sounds—the creaking, bubbling, etc.—gradually ceased.

"Many deaf people are mouth-breathers; this is sometimes due to enlarged tonsils or to adenoids, sometimes to the presence of both troubles, but it is also sometimes due to turbinal hypertrophy pure and simple, or complicated with spurs or deviations or deflections of the septum. Many mouth-breathers have been cured by spokeshaving, and have quite altered in facial appearance after a few weeks, the typical stupid expression having disappeared and given place to a bright and lively one. The patient, having learned to breathe through his nose, is less liable to catch cold, and in some cases quite loses his postnasal catarrh or pharyngitis. Asthma, hay-fever, periodical attacks of sneezing, and a sense of stifling when inhaling dust or foul atmosphere have ceased to distress the patient.

"In some cases in which only a strip of thickened mucous membrane was removed from the turbinals without any bone great relief was afforded; this unhealthy mucous membrane used to swell up when irritated and cause nasal obstruction, with its reflex effects. Several ballet-dancers found they could breathe more easily, dance with less fatigue, and were not so troubled in their breathing by the dust kicked up from the stage.

"The sense of smell sometimes improved markedly. Several

anæmic girls lost their anæmic appearance and greatly improved in their general health without the exhibition of iron or arsenic or any drugs.

"It will readily be understood that, after an obstructed nostril had been cleared out and made pervious, the Eustachian catheter could be passed more easily and larger sizes could be used.

"A child, 4 months old, could not suck properly. I did not find adenoids as I had expected, but both posterior nares were blocked by the posterior ends of the turbinals. The child had to take its mouth away from the breast and gasp for breath between every two or three draws; twenty-four hours after spokeshaving the child took a full meal in a natural manner. In young children the nose developed and improved in shape after it was converted into a useful organ, just as is seen to occur after adenotomy. Several patients with pain in the eyes, affection of sight, and turbinal hypertrophy were cured of their eye troubles.

"Hæmorrhage always followed the operation, but was generally easily controlled, though troublesome in a few cases. Secondary hæmorrhage was rare, but in one case it came on smartly exactly a fortnight after operation. Cooper-Rose's nasal plug is most effective in controlling the hæmorrhage.

"Otalgia, suppuration, and perforation of the drum occurred occasionally, but were probably due to blood-clot or douche-fluid being driven through the Eustachian tube into the tympanum by too forcible blowing of the nose. Headache of varying severity and duration has followed the operation. Bromide generally relieved this at once.

"It has been suggested that local depletion may have something to do with the relief of tinnitus; but this seems hardly likely when it is remembered that the relief has persisted for several years. The operation has not been found to be followed by bronchitis. No death has been attributed to the operation so far as I know."

D. Bryson Delavan, of New York, said that the subject was one of great importance because of the wide circulation which had been given to the idea of turbinectomy and of the urgent necessity for checking a practice at once unscientific and objectionable. It was necessary to understand from the outset the physiological importance of the turbinated tissues. Their part in the normal process of respiration—that of cleansing, warming, and moistening the inspired air—was indispensable to the health of the individual. Interference with this function, either through extensive destruction of the mucous membrane, as in dry catarrh or in the wholesale removal of the turbinates, whereby too great a volume of air was allowed to pass through the nose, was sure to be followed by bad results. This statement would find ample proof in the experience of all present. Again, most obstructive conditions of the nose were due either to deformities of the nasal septum or to thickening of the turbinated tissues. Removal of the former was pretty sure to be followed by relief. Where the obstruction was due to thickening of the soft parts it was necessary to discover whether the enlargement was purely local in character or whether it depended upon some general or remote cause. Thus, chronic hyperæmia of the turbinated tissues was often associated with gout and rheumatism, with digestive disorders, with functional or

organic derangements of various important organs, as well as with bad hygienic conditions, the excessive use of tobacco or alcohol, undue sexual stimulation, exposure to local irritation, and the like. The recognition and proper treatment of the cause of the thickening would often be followed by its cure, and the latter would be effected with the mucous membrane in a normal condition. The speaker agreed with Dr. MacDonald that posterior enlargement of the turbinated bones was unusual. He had examined many thousands of skulls, but had seldom seen it. Anterior enlargement was quite common. In most cases of turbinated thickening removal of a part of the soft tissues was generally all that was required. No result had been reported in the paper of Mr. Jones which could not have been attained by simpler and less destructive measures. The application of his operation to young children was to be vigorously deprecated. The infant nose was developed very late. It was doubtful if the turbinates could be removed in a young child, in case they were to exist at all, without serious injury to important surrounding parts. The speaker could conceive of but few conditions in which such a procedure would be thought of, much less executed. The name "spokeshave" was itself suggestive of a coarse and inexact instrument, intended to prepare the way roughly for the use of finer tools. Its use in nasal surgery was totally inadmissible, as we were already possessed of ample means for securing all necessary results, and in an infinitely better, safer, and more conservative manner. It was necessary that the advocates of this method should publish the ultimate results of their work. It might then appear that much harm had arisen from it. The great *desideratum* in all nasal surgery must always be kept in mind,—namely, the securing of the maximum of relief with the minimum of destruction.

Method of Operating.—R. P. Lincoln, of New York, said: "The subject of turbinotomy involves the consideration not only of the details of the operation itself, but also the reason for it,—the excuse, if you please. We are rarely called upon to do this operation because the organ is itself involved by a disease that is of itself destructive locally or constitutionally, but because of their interference with the function of the organ of which they form an important part, or, it may be, the adjacent organs are the sufferers, or because of those curious manifestations through the nervous system we call reflex.

"An operation having been decided upon and its character determined, its accomplishment must be preceded by a step the failure of which may not only nullify our subsequent treatment, but hazard the life of our patient.

"*Antisepsis.*—It is claimed that the normal secretion of the nasal mucous membrane is a destroyer of many of the morbific microbes passing over its surface in the course of respiration. Remembering that this secretion is perverted in the majority of patients applying for treatment, we recognize its conversion into a culture-medium for disease germs that are ever present and added to as the respired air is being filtered. In proportion, then, as this change from the normal obtains does the patient subjected to operation incur the danger of sepsis unless counteracted by scientific treatment, both preliminary and consecutive. Furthermore, the intranasal surgeon should ever

be mindful of the fact that a turbinate body is physiologically and anatomically most ingeniously constituted to harbor and transport disease germs, and that he consequently cannot invade this organ with the impunity of surgeons operating in other fields. Not only should the nasal cavity that the surgeon is to invade be cleansed and rendered aseptic, but the operator's hands and all instruments used should receive, with the same object in view, his conscientious attention.

"Granted the necessity for antiseptics, we have a long list of remedies available, but less than half a dozen need necessarily occupy our attention. The surface of the mucous membrane having been thoroughly cleansed by some alkaline wash, as Dobell's solution, three times a day for two days previous to and immediately before the operation, each sitting should be finished with a very free spraying of a solution of bichloride of mercury, 1 part to 3000 or 5000. Subsequent to the operation a repetition of this spray and wash should be insisted upon, or if a fresh surface has been left,—as after operations by knife, scissors, saw, or trephine,—a spray of a solution of iodoform in ether will prove the safest. Our methods might be classed as chemical and surgical. Of the remedies applicable in the former fortunately all are more or less antiseptic, as chromic acid, nitric acid, etc.; but, until the eschar which they form has separated, it is prudent to make use of the bichloride and afterward of iodoform, until cicatrization is well advanced; until the parts have healed, cleanliness must be insisted upon, though, during the last part of the treatment, some less disagreeable remedy may be substituted for iodoform, as aristol, or, better, pyoktanin. It may be said that results have been satisfactory and without accident where these precautions have not been observed. I reply, the probability of a successful issue is greatly enhanced by accepting advanced views in asepsis.

"Every operation contemplated within the province of turbinectomy can be painlessly completed by the judicious use of cocaine. Its advantage to the operator, and its blessing to the patient, can only be realized by those who were workers in this field before its local anæsthetic effect was made known. I do not use it in spray form where a strong solution is to be employed, but to avoid its constitutional effect, as far as possible, lay against the part to be operated upon a pledget of aseptic cotton saturated with it. This may be renewed two or three times at intervals of about ten minutes preliminary to the severer operations, except when it is the intention to make use of the cold, wire loop, when, on account of its contractile action upon these structures, it should be applied after the wire has engaged the part to be removed. Furthermore, this preliminary employment of cocaine on account of its hæmostatic action diminishes the inconvenience of whatever bleeding occurs, which would otherwise be greater.

"I would distinguish in two classes the methods by which I think our object can be accomplished most speedily and successfully,—namely, the chemical and the surgical. The class in which the chemical method is applicable embraces hypertrophies, hyperplastic and angiomatous, without osseous enlargement. The remedies especially useful to secure reduction have been multiplied during the past few years, but every advantage can, I believe, be secured from a very small

list. With chromic acid, nitric acid, and the galvano-cautery at command, every requisite is available. These remedies are easily and accurately applied, and circumscribed in their action. The contraction of cicatricial tissue, after the separation of the eschar thus formed, will often leave patulous a nostril previously obstructed.

"Experience, shaping the judgment of an operator, will enable him to determine the area upon which the remedy must be applied, as well as its strength, keeping in mind that we are to destroy an obstacle, but to preserve as much mucous membrane as is practicable. For some days following one of these applications the ingenuity of the surgeon, with the co-operation of the patient, may be devoted to cleansing the nostril of accumulated *detritus* and mucus, continuing, to some extent, the preliminary treatment, and substituting, toward the termination, promoters of granulation,—astringent stimulants,—as iodoform, aristol, pyoktanin, or some similar favorite remedy. It may sometimes be found advantageous to utilize some features of this treatment in the more serious cases of the second class. The operator must not lose sight of the necessity in order to accomplish his purpose of securing, by his treatment, a solution of continuity in the periosteum, in order that the remaining net-work of connective tissue and venous sinuses may be drawn together, and, as it were, partly bound upon its bony frame-work.

"The second class demands the more serious operative procedures,—namely, where the frame-work, as well as any redundant soft tissue, is to be removed by either incision, excision, or ablation. The whole, or only part, may require removal. Its erectile-tissue covering or its osseous portion may require modification in whole or part. We must consider how much and what part of the organ is to be sacrificed. We have, in ignipuncture, a combination of chemical and surgical treatment that I have often found most satisfactory in reducing hyperplasias, but, unless great care is exercised, its results are apt to resemble a galvano-cauterization. In its use a sharp-pointed electrode, exposed from one-third to one-half inch, is thrust through the mucous membrane to the bone, and pressed in contact with it as far as may be desired. An electrolytic rather than a cautery current, from the sensitive pole of a battery, should be allowed to flow for two or three minutes, depending upon the degree of distention or symptoms of threatened cauterization.

"The cold, wire snare and *écraseur*, as perfected and recommended by the late Dr. Jarvis, is most convenient and effective in removing a redundancy which often protrudes from the posterior aspect of the inferior and middle turbinates, readily cutting through both soft tissue and bone when desirable.

"When the malformation is caused chiefly by osseous enlargement without hyperplasia, the surgical trephine is all that can be desired. With it there can be mined out, so to speak, all the bony substance we desire, leaving almost intact the remainder of the organ. Subsequently, should a fold of membrane remain in excess of what seems useful, it can easily be excised with a pair of scissors with little inconvenience. This instrument is also well adapted to opening into ethmoid cells by removing a 'cap' of a turbinated body to facilitate drainage.

"Most frequently, however, it is expedient to remove both hyperplastic and bony tissue at one operation. With a small sharp-pointed bistoury fixed at an angle to its handle, an incision is made down to the bone along or a little below the line we may have determined the excision shall be made. With some convenient instrument the lips of the wound should be parted and dissected away for a short distance, so as to leave a flap that will partly cover the border of bone when the operation is finished. A few strokes of a saw on the line elected for division, especially if ossification is well advanced, will facilitate the last step of the operation which follows. Immediately adjust, with its upper cutting blade in the groove thus made, a pair of bone-forceps, having its lower blade well pressed under the free edge of the turbinated body; a strong closure, rotating inward the instrument at the same time, will sever the portion effectively. The instrument I use for this purpose is known as Weir's bone-cutting scissors. In this way from half an inch to an inch in length can be removed at once, and, by repeating this method, practically the whole organ can be ablated at one sitting.

"It is surprising how little bleeding follows and how little pain. Immediately place in contact with the cut surface a fine roll of iodoform gauze, avoiding complete obstruction of the nostril. This serves the double purpose of disinfection and of preventing hæmorrhage, which otherwise not infrequently occurs when the effect of the cocaine has passed. It is prudent to leave this undisturbed for about forty-eight hours, though accumulated mucus should be carefully removed by absorbent cotton and gentle pressure, not forgetting to use the bichloride or iodoform spray. After the removal of the iodoform gauze, the principles of treatment heretofore insisted upon should be observed.

"The knife-plough or the share may be employed to remove a turbinated body. Their manipulation cannot be as accurate as in the last method; and, while there may be some saving of time, I do not recommend them in private practice."

Lennox Browne, of London, expressed regret that he never had been able to harmonize his own views on the value of this operation with the enthusiasm of Mr. Carmalt Jones; and he stated that it was the only subject of difference with his amiable colleague during over ten years of delightful association. He believed that it was wiser to treat the cases for relief of which turbinotomy was advocated by some of the milder measures so carefully detailed by Mr. Lincoln; and that, if this plan were pursued, a very small percentage—less than 1 per cent.—would be found to require this radical procedure. He wished particularly to recall to mind the fact that spurs and deviations of the septum were present, not constantly, as stated by Bosworth, but in probably four-fifths of all cases of hypertrophic rhinitis, and that their etiological importance was demonstrated by the prompt relief of nasal obstruction afforded on their removal. He desired, in particular, to join with Dr. John Mackenzie in enforcing the inadvisability of operating on infants and young children; and he explained that the case described was, he believed, quite an exceptional one, even in the practice of Mr. Carmalt Jones; and that, though its parallel might occasionally present itself, it must always be rare. The speaker

suggested that many of the cases of disordered secretion and flux ascribed to hypertrophy of the inferior turbinals were due to suppuration in the pocket of Luschka's bursa, as described by Tornwaldt, and he believed that it was a cause not infrequently overlooked, at least by British laryngologists. He doubted whether on histological examination by a neutral expert of removed turbinals a larger proportion would be found to be really diseased than had been proved the fact some years since by an American pathologist—whose name he for the moment forgot—in the case of ovaries removed by Batty's operation. Mention has been made to the hæmorrhage following turbinotomy; this was, without doubt, sometimes alarming, and, in the speaker's experience, increased rather than diminished by the use of cocaine; for the purpose of minimizing this liability to bleeding on reaction from the effects of this drug, not for turbinotomy alone, but for all cutting operations within the nose, he had long been in the habit of dissolving the cocaine taken fresh as required, in hazelin, a well-known extract of the witch-hazel.

W. Permewan, of Liverpool, was pleased to hear Drs. Delavan and MacDonald object to the use of the word "spokeshave." Spokeshaving suggested operating on inanimate structures, and Dr. Permewan was afraid that idea dominated those who practiced often the operation of complete turbinotomy. Dr. Permewan was of opinion that the complete operation was very rarely required, but he also thought we were indebted to Mr. Carmalt Jones for the introduction of an instrument which was very useful for the removal of parts of the turbinal or of the septum. He was very pleased to hear the almost unanimous opinion of American rhinologists as to the undesirability of complete removal, and thought also English opinion had progressed in the direction of conservatism since the meeting of 1894 at Bristol.

W. H. Daly, of Pittsburgh, said that turbinotomy did not mean, or should not mean, a removal of all the turbinate, but only so much as was absolutely necessary to provide for proper nasal respiration; anything more was wrong. There were really no hard-and-fast rules that applied to the adult requiring turbinotomy that did not also apply to the child. He had done it several times, and within the previous ten days he had removed a part of both inferior turbinate bones from a child 2 years old; there were no pharyngeal adenoids and no other obstruction to nasal breathing other than that caused by the two inferior turbinate bodies projecting across the nares, and impinging upon the septum; they were abraded in about half their extent with the best possible results to the patient, and a recognized cure of the disability in the part; afterward the child slept soundly, quietly, and comfortably.

Charles Warden, of Birmingham, was pleased to find that there was a consensus of opinion on this operation among the members present to the effect that the operation was often performed when less severe treatment would relieve, as by cocaine, chromic acid, eucaine, the electric cautery, menthol, etc. In very young children, except in very rare cases, it was quite unjustifiable. The turbinate had a physiological function which should be carefully considered before adapting heroic surgery. Attention to the septum would often obviate the

necessity for the operation, and it should not be done to enable the Eustachian catheter to be used.—British Medical Journal, November 13, 1897.

UNITED STATES.

Association of Obstetricians and Gynæcologists.

Appendicitis and Its Relation to Disease of the Uterine Adnexæ.—Dr. John B. Deaver, of Philadelphia, stated that all surgeons of experience would, doubtless, agree with him that acute appendicitis is the most common and one of the most fatal of all acute intra-abdominal affections. Furthermore, that this mortality is, in a great measure, due to a failure to make an early diagnosis, as well as the improper character of the treatment instituted. The position which he has held—namely, to operate as soon as the diagnosis is made—he still maintains. Assuming that this is done very shortly after the onset of the attack, he knows that this course is attended by the least mortality. His experience in the operative treatment of this disease embraces many hundred cases, and he affirms that he has never seen a human life lost where operation was performed immediately following the onset of the disease; the converse is true in very late sections. While he was aware that to discriminate between cases and to be able to say from the onset which are operative cases and which will recover without operation, or to be able to defer operation with absolute safety for two, three, or more days rather than to "rush in," as some put it, and remove the diseased appendix as soon as the diagnosis is made, may be more scientific, yet he knows positively that this course is at the cost of many human lives. When, therefore, it becomes a question of following the lines of theory or that of experience, which teaches practical facts and which, when instituted, will bring practical and favorable results, his mind permits of no choice,—operation is the only indication.

The author then reviewed some of the results of appendiceal inflammation. First and most important, because of the high rate of mortality, is perforation of the appendix with general septic peritonitis. Next, perforation with localized abscess-formation which, if not evacuated early, produces general sepsis, a tedious convalescence, a granulating wound, and, in many instances, ventral hernia or fæcal fistula. Appendicitis followed by large localized abscess necessarily means the destruction of a great deal of tissue which, in some instances, nature fails to repair, to say nothing of the loss of life when it occurs in the young or feeble. He considers the formation of a localized abscess occurring as the result of an appendicitis anything but the most fortunate culmination of the attack for the following reasons: namely, because the inflammation should not be allowed to reach that stage; that in the hands of the majority of operators it is an excuse to leave the appendix, they believing that with the evacuation of the abscess they have accomplished all that can be expected; a great mistake, in his opinion. This practice, he states, not only offers an excuse in too many instances for leaving behind an appendix which is more liable to be the cause of subsequent and less favorable

attacks, but also exposes the patient to the risk of an undiscovered secondary collection, which, in his experience, is a frequent cause of death.

The presence of pus increases the danger of lymphatic infection. This is also true of infection through the portal system (pylephlebitis) resulting in miliary abscess of the liver and death. The complications which may arise from an undisturbed localized appendiceal abscess are its rupture into the bladder, thus occasioning an entero-vesical fistula; rupture into a bronchus and evacuation by way of the mouth; rupture into the ascending colon, rectum, or vagina, which is not to be considered a favorable temination and does not preclude the possibility of a recurrence of the inflammation; rupture into the ureter with evacuation of pus through the bladder, a complication of which is intestinal obstruction, due to adhesions which have been formed in the process of localization. Again, secondary obstruction may follow the evacuation of an abscess, due to the subsequent contraction of its walls. Aseptic phlebitis, phlegmasia alba dolens, is not an uncommon sequence of localized abscess-formation.

A condition of affairs which may arise as the result of a small collection which has remained undisturbed, is when the abscess-wall has undergone a cheesy degeneration, involving contiguous structures in the process. When the bowel has been thus included an attempt to remove the degenerated mass will frequently bring to light a perforation of the bowel, often so large as to necessitate excision, enterorrhaphy, or an anastomosis. In operating for appendicitis, the multiplication of the difficulties induced by pus-formation must prepare the surgeon to expect to meet and handle any of the complications of abdominal surgery.

To recapitulate, the large mortality in appendicitis, according to Dr. Deaver, is the result of too conservative measures in the early stage of the disease. Surgeons whose experience in the treatment of appendicitis has been large, will to a man agree in this statement. He has yet to see a human life lost where, in an acute attack of appendicitis, the appendix has been removed within six to eight hours after the onset of the disease, while, on the other hand, he has seen many human lives lost by adopting the so-called conservative methods,—namely, opium to relieve the pain, allowing the bowels to remain confined, leeches, fly blisters, turpentine stupes applied,—any or all of which are not only useless, but harmful. He cannot emphasize this too strongly, as he has seen five deaths in as many days, in all of which cases he is morally certain that had the appendix been removed immediately after the onset of the first pain all would have recovered.

The question naturally arises, who is largely responsible for this high mortality? Is it our teachers? Personally, he feels that it is. What is the alternative? The author suggests that our professors in the different teaching institutions witness a number of operations done early (most of them see them done late). The list of skeptics will diminish, he thinks. This, too, could apply to the writers of articles condeming too frequent operation. The last mentioned are evidently wanting in experience, otherwise they could but entertain different views.

The conditions in the female which call for careful thought in

differentiating between one or other of the diseases of the uterine adnexæ and acute or chronic appendicitis are the following:—

I. Acute Salpingitis.—There is frequently a close relationship between acute catarrhal appendicitis and right-sided acute salpingitis, due to Clado's ligament, and the symptoms may, as a result, closely resemble each other. The great points of difference, however, are the history of infection, the slight degree of abdominal tenderness and rigidity, the location of the pain, and the absence of vomiting, and in the case of appendicitis the pain migrating from epigastric or periumbilical to the right iliac fossa, the decided tenderness and rigidity of the lower right quadrant of the abdominal wall, suddenness of attack, accompanied by vomiting and no history of infection, the absence of signs by vaginal examination, and the presence of a palpably enlarged appendix.

II. Pyosalpinx and Ovarian Abscess.—The presence in the rectouterine *cul-de-sac* of an inflammatory mass in intimate relation with the uterus, which renders it partially or completely immovable and which can be clearly outlined by vaginal, bimanual, or combined vaginal and rectal examination, together with the history of a vaginouterine infection and the presence of a septic fever, establishes the diagnosis of pyosalpinx or ovarian abscess. The essential points in the diffentiation between these two affections and appendicitis are the suddenness of onset in the latter, accompanied by vomiting, and the characteristic rigidity and tenderness following general abdominal pain.

Inflammation of the right ovary may be confounded with appendicitis, as it is attended with pain, tenderness in the right iliac fossa, nausea, and fever. It is, however, always accompanied by disturbance of the uterine functions, is accompanied by the characteristic "ovarian" pain and is demonstrable by vaginal or bimanual examination. The tenderness is never so intense as in appendicitis, and is not accompanied by a perceptibly enlarged appendix.

III. Extra-uterine Pregnancy.—The history in these cases is usually that of partial or complete cessation of the menstrual flow for one, two, or more periods, generally accompanied by other symptoms of pregnancy, with collapse supervening upon an attack of acute abdominal pain. The pain is long-continued and paroxysmal, but not colicky. An irregular, bloody, vaginal discharge, generally lighter in color than the normal menstrual flow, and containing shreds of tissue and portions of the decidua, is present. Vaginal examination will detect a tender and sensitive mass in the posterior *cul-de-sac*, unless the pregnancy be an abdominal one. In the majority of cases there is a history of sterility for five or six years previous to the abnormal conception.

When the product of conception occupies the fimbriated extremity of the right tube, the points of differentiation are more difficult, owing to the close proximity of the lesion to the position of the appendix and to the negative result of examination *per vaginam* prior to rupture. Should the two conditions occur coincidently, it would be well nigh impossible to differentiate between them.

The chief points to be borne in mind, however, when the two conditions do not co-exist, are history and the absence of inflam-

matory symptoms proir to the rupture of the extra-uterine and the presence of inflammatory symptoms in appendicitis.

IV. Suppurating Ovarian Cyst.—An appendiceal abscess and a small suppurating ovarian cyst on the right side present some symptoms in common which may give rise to difficulties in diagnosis. These symptoms are: painful tumor in the right iliac fossa, which may be made out by vaginal, bimanual, and rectal examinations; symptoms of septicæmia; hectic temperature; and history of previous gastric and urinary irritation. The differences, however, are marked and can be distinguished by careful consideration. In ovarian cyst the onset is gradual and a history of infection can generally be elicited. The pain is constant and of a dull character; by pressure the significant "ovarian pain" may be produced, differing from the colicky and paroxysmal pain of appendicitis, while the tumor itself is more elastic, having apparently thinner walls and a more regular outline.

V. Ovarian Cyst with a Twisted Pedicle.—Ovarian cyst with a twisted pedicle gives, as a rule, a history of a slowly growing tumor, which is so frequently unaccompanied with pain that its presence has been unsuspected until the accident occurred. The onset of the acute symptoms of a cyst with a twisted pedicle is sudden and is usually caused by excessive peristalsis of the intestines or from sudden changes of the position of the body, causing the tumor to revolve. If the twisting be complete and shut off the circulation, the walls of the cyst will rapidly become gangrenous and the patient will become profoundly septic with localized peritonitis, which soon becomes general. Here, again, is seen a resemblance to an attack of appendicitis with abscess-formation; but, the difference in shape, elasticity, the slow growth, if noted, preceding the sudden onset, the difference in the character of the pain and the tenderness and the lessened degree of rigidity should enable one of experience to distinguish between the two.

If, however, for any reason it is impossible to make a differential diagnosis, he advises the lateral incision as the one to be chosen, because appendicitis is so much more common an affection that the chances are in favor of its being the latter. If it is an ovarian cyst the lateral incision can be closed and a median incision made for its removal. The median incision for appendicitis is illogical, unwise, and in many instances will present anatomical impossibilities. Where the appendix lies behind the cæcum and observes one of the northerly directions, if adherent, will present difficulties in the removal through the ordinary incision. It is, therefore, plain to be seen how much more difficult it would be to attempt its removal through the median line. These difficulties are generally enhanced when there is pus-formation and, further, the danger of peritoneal infection is greatly multiplied.

VI. Fibroid Tumor.—Appendicitis has been confounded with a local inflammation of a portion of the broad ligament overlying an intraligamentary fibroid tumor. The main points in the differential diagnosis are the history of metrorrhagia; the presence of a growth, detected upon vaginal examination; the tenderness and pain which are elicited upon abdominal palpation and are confined to the part of the wall overlying the mass.

VII. A Varicose Condition of the Veins of the Broad Ligament may Simulate Chronic Appendicitis.—A differential diagnosis should, however, be easy to make, because, on the one hand, we have an absence of inflammatory symptoms and a characteristic dull, aching pain, with nausea, which disappears when the veins are emptied upon the patient's assuming the recumbent position. Again, in chronic appendicitis there is a history of one or more acute attacks with a palpably-enlarged organ and the symptoms of chronic inflammation.

VIII. Painful Menstruation.—A condition which may be misleading in the differentiation of appendicitis is the sudden onset of pain occurring in young married women of a neurotic temperament at the ushering in of the menstrual period. The onset is sudden, the pain is paroxysmal and accompanied by nausea. There may be more or less rigidity of the lower abdominal walls, which is most frequently bilateral. The presence and the degree of the rigidity of the abdominal walls depends upon the amount of congestion of the ovaries, and whether one or both are involved. The pain, at first paroxysmal, is most severe during the first day of the menstrual flow. After this it may become continuous and, in some instances, last during the entire period. The tenderness and rigidity correspond to the amount of ovarian congestion. If both ovaries are involved, the tenderness will be bilateral. The pain at the onset differs, however, from that of appendicitis, being non-inflammatory and localized from the beginning, while in appendicitis there is general abdominal pain, which later becomes localized in the right iliac fossa, while marked intestinal symptoms are present.

IX. Menopause.—Some women during the climacteric occasionally complain of symptoms resembling appendicitis. They suffer from localized pain in the right side, gastric and intestinal disturbances, and irregular temperature. As absence of the menstrual flow often exists, some difficulty may be experienced in reaching a correct diagnosis, particularly in those cases associated with obesity. A correct diagnosis as to the condition present, however, may be established by careful inquiry into the previous history and by local examination. The latter means will demonstrate the absence of rigidity of the abdominal walls and no palpable enlargement of the appendix. The flushes, backaches, and mental symptoms incident to the menopause will clear up the diagnosis. The mere mention, however, of the nervous affection, with its ubiquitous symptoms, will suffice.—American Journal of Surgery and Gynæcology, November, 1897.

Treatment of Uræmic Eclampsia.—G. R. Eakins (Australasian Medical Gazette, September 20, 1897), in a case of uræmic eclampsia, followed by recovery, in which the patient had been unconscious for five days, employed the following treatment: He administered chloroform to obtain rapid delivery, and emptied the uterus of its contents. He allowed free bleeding from the uterus,—thus obviating necessity for blood-letting, which he firmly believes in. He then resorted to the hypodermic administration of saline solution, to disinfecting the bowels, and continuous administration of warm-water irrigation.—Medicine, December, 1897.

Clinical Notes and Therapeutic Suggestions.

Notes on the Treatment of Typhoid Fever.—Solomon Solis-Cohen states that should a routine treatment of typhoid fever have to be pursued, there is no question that least harm and most good will result from the employment of systematic bathing in cold water after the method of Brand. But this treatment is not always necessary, nor is every case bathed best treated by undeviating adherence to Brand's method. Unquestionably water, and often cold water, is the one agent of greatest utility in the management of enteric fever. Water should be used freely in every case, and should be used both internally and externally. In severe cases, or in cases that promise to be severe, if seen before the tenth day systematic plunging in cold water should be instituted at once; and the now classical directions of Brand should be followed with reasonable strictness. The inexpert will do better by following them to the letter than by attempting modification. The experienced will adapt his directions to circumstances. The author states that between the tenth and twelfth days it is doubtful whether plunging should be begun. After the twelfth day the inexpert should never begin plunging. Plunging begun earlier will, of course, be continued or discontinued according to circumstances. When plunging is not well borne, or when for any reason it has not been instituted, frequent cold or cool sponging should be carried out. This is partly to reduce temperature, but largely, like the bathing, to promote general metabolism, to stimulate excretion, and to keep up the tone of the peripheral vessels which Dr. Woods Hutchinson so aptly calls "the skin heart."

The temperature index may serve as a guide to sponging, as to bathing. When the temperature in the mouth does not exceed 103° F., the patient may be sponged every second or third hour, with water at a temperature of 70° F., which may, if necessary, be gradually reduced to 50° F., in the course of ten to twenty minutes. When the temperature exceeds 103° F., sponging must be done at least every second hour, and the temperature of the water be correspondingly lowered; 60° or even 50° to begin with, and rapid reduction to 32°, being useful at times. The effects on temperature, pulse, respiration, excretion, sleep, and general comfort, must be the guides as to the time, temperature, and other details of the application; as a rule, patients should be allowed to sleep undisturbed for about four hours, even when applications are being made every second hour during wakefulness.

To reduce temperature, should this be thought necessary, and to prevent or control tympanites or hæmorrhage, the continuous application of ice to the abdomen—usually over the right iliac fossa—is useful. Sometimes it is advisable to intermit the use of ice, or to alternate the application of ice to the head and abdomen. In cases of severe nervous and cerebral symptoms or very high temperature there may be continuous application of ice to both head and abdomen. McCormick has had excellent success with the use of guaiacol externally.

The patient should be encouraged to drink cool water freely and frequently. The temperature should be that found to be most refreshing. Ice-water should not be used.

Internal medication is useful. The bowels should be cleansed by enema on admission (unless after the tenth day), after which, according to circumstances, a few small doses or one large dose of mercurous chloride (calomel) should be given. After the "calomel stool," intestinal disinfectants may be usefully employed. These may not kill Eberth's bacillus, nor neutralize its toxins, nor chase after it into the spleen or cerebrum; but they do render the patient's intestine a less favorable breeding-ground for this organism and its many named and unnamed congeners; they do diminish the formation, and hence the absorption, of various named and unnamed toxins; they do render the course of the case less severe. The author affirms this unhesitatingly as the result of a sufficient clinical study.

Of drugs of this class one may use guaiacol or its combinations, of which he prefers the carbonate; phenyl-salicylate (salol); beta-naphthol or its benzoyl-compound (benzonaphthol); creasote or its carbonate (creasotal); carbolic acid and iodine; and the like. He usually employs salol or guaiacol-carbonate, in doses of about 5 grains every second or fourth hour; more recently he has used benzonaphthol in doses of 10 and 15 grains. If diarrhœa is troublesome, bismuth salicylate may be used with the more powerful antiseptic. If constipation be a feature of the case, an enema should be used every forty-eight hours, except during the period when ulceration is at its height, —say, from the twelfth to the sixteenth day,—when the bowel should be let alone.

If, notwithstanding the free use of water, the urine is not excreted in sufficient quantity (that is, if it be less than 30 ounces in a day), some mild diuretic, as solution of ammonium acetate, or sweet spirit of nitre, or infusion of buchu, should be given. This is rarely necessary, as the water drunk is usually an efficient diuretic, and the stimulation of the skin likewise assists excretion.

When the tongue is dry, harsh, fissured, or covered with brownish fur, turpentine is useful, beyond doubt. Sufficient must be given,—about 15 drops in emulsion or syrup of acacia, every second to fourth hour. If any sign of renal irritation develop, turpentine must be abandoned. He has, however, never seen it do harm, and has seen it do good too often to be laughed out of its use. It also serves well in cases of tympanites or hæmorrhage.

During the second week strychnine is useful in small doses,—say, 1-100 to 1-60 grain every second to sixth hour. During the third week it may be increased to 1-30 grain every third hour, if need be. Alcohol is rarely necessary before the third week, and often unnecessary throughout. In case of high fever, however, it sometimes saves combustion of tissue, and, when the Brand system is carried out, a little red wine (1½ ounces) should be given before and after each bath.

Concerning complications, referring to hæmorrhage, he believes opium to be our best remedy. With this, continuous application of cold to the abdomen by means of the ice-bag and the use of turpentine may be combined. Ergot is useless. Calcium chloride may possibly be useful. He thinks it has been useful in his hands, but he has also seen it fail to do any good. McCormick strongly advises against the use of opium in hæmorrhage, and warmly advocates flushing of the colon with cold water. His results have been good, but the author

hesitates to abandon the classical plan, which has hitherto yielded good results in his practice.—Philadelphia Polyclinic, December 4, 1897.

Ozone.—Whether ozone plays an important part in the hygiene of nature is a moot point. Pure ozone is unquestionably poisonous. In air which is largely polluted with organic matter, as is the air of London and other large towns, small quantities of ozone cannot obviously live long. It is, of course, a powerful oxidizer, and the oxygen with which it is surcharged is soon absorbed. It is found, however, in distinct quantity in the pure air of the country and, as everybody knows, in sea-air. Its occurrence in air is invariably connected with the existence of water generally in motion. Thus the wind blowing over the sea-waves or over the waves of a lake or the air in the immediate neighborhood of a waterfall or spray contains a notable amount of ozone. Of course, ozone must, to some extent, exert a purifying influence upon the air, but this can only be of importance when the ozone occurs in distinct quantity or when it is being constantly evolved, as over the surface of the sea. Doubtless sea-air and mountain-air owe their beneficial qualities to their purity, which, in some measure, is due to the action of ozone. This fact has led to the devising of apparatus for the simple and easy production of ozone in hospitals and large buildings. It may not be generally known that a very simple and effectual way of bringing ozone into the house consists in first suspending moist linen sheets in a keen, dry wind, and afterward hanging them up in the house. The air in the room will thus become considerably charged with ozone and its presence will be easily detected by its peculiar smell, while a moistened starch-iodide paper will instantly turn blue. Why ozone is accumulated in wet clothes in this way is not quite understood, but it may be due to the rapid passage of the oxygen in air over a large wet surface. It is not improbable that this interesting phenomenon plays an important part in the real hygienic cleansing of our linen articles of clothing. In big laundries when the not quite dry linen is brought in after having been exposed to a cold, dry air for a short time the smell of ozone is almost more than is agreeable.—Editorial, Lancet, November 27, 1897.

Creasote in Chronic Constipation.—One of the most difficult conditions to treat is that of chronic constipation. The objection to massage of the abdomen and electricity is that they are expensive and require much more time than many patients can give to them. Drugs are usually too powerful, and, once their action is exhausted, are apt to leave the patient more constipated than before. A physician residing in Paris, Dr. Vladimir de Holstein, claims that a satisfactory result may be obtained by administering creasote. This drug should be given pure, and not, as usually is done, in alcoholic solutions or in pills. Seven or 8 drops should be given twice daily, after a meal, in a glass of water or any other liquid. If the dose is found not to act, it should be increased. Inasmuch as the patient may complain at first of the burning caused by the creasote, it is often well to begin by a smaller dose,—say, 1 drop daily,—increasing daily by 1 drop until the desired result is obtained. Not only is constipation done away with, but the appetite increases and the general condition is improved.

This treatment should be continued for several months. Dr.

Vladimir de Holstein thinks that creasote does not act as a purgative, but neutralizes some intestinal toxin which causes paresis of the intestinal tube.—A. T. Turner, Paris Letter to Therapeutic Gazette, October 15, 1897.

The Treatment of Ozæna.—Moure ("Traitement de l'Ozène," Bordeaux and Paris, 1897) compares the relative value of the different methods of treating ozæna. Although none give such good results as were obtained by their inventors (Cheval claimed to have cured 91 per cent. by "interstitial electrolysis"), he protests against the attitude of those who, believing the disease to be incurable, do nothing for it; for, though all cases cannot be cured, all can be greatly improved by treatment. The author first rids the nasal cavities of the dry crusts by rubbing the mucosa with cotton-wool soaked in phenolized glycerin and fixed on a holder. Afterward he puts it to the patient whether he is willing to undergo a strict and long course with a view to eventual cure or whether he wishes simply to get rid of the crusts and smell. In the latter case he prescribes nasal and retronasal douches of 1 or 2 litres of saline, bicarbonate, or boric solutions morning and evening, to be followed by a spray of mentholized oil. If larger quantities of lotion are required, the first douche should be made with one of the above solutions, the last with half a litre of one containing a soluble antiseptic, such as carbolic acid, 1 in 20, with glycerin and water. This suffices to do away rapidly with the smell. In the former case he prescribes nasal and retronasal douches of saline solution to be used by the patient. He himself "massages" the mucosa with a plug of cotton-wool on a holder soaked in 1 in 15 or 1 in 10 phenolized or iodized glycerin every other day for a fortnight, then twice a week, and then from time to time according to the progress of the case. The massage is always followed by a douche to remove the secretions; the mucosa is then sprayed with a 5- to 25-per-cent. silver-nitrate solution, and finally an alkaline douche is given to remove the excess of nitrate. This often produces a slight acute coryza and headache, which usually soon pass off. After a month or two of this treatment it is possible to discover where the purulent secretion arises, and it is usually found in obstinate cases that the mucosa alone is not at fault, but that frequently one or other of the accessory cavities is involved. Treatment must then be directed specially to this sinus. The frontal or maxillary sinus, especially the latter, can be treated directly, and then a permanent cure can be effected. With the ethmoid or sphenoid the most careful treatment, mopping out the cavities, or even cauterization and curetting, may fail to effect a cure. Such patients must undergo a regular course lasting three or four weeks two or three times a year. General constitutional treatment must not be neglected.—British Medical Journal, September 30, 1897.

Case of Protracted Jaundice Due to the Impaction of a Gall-stone in the Common Bile-duct.—Dr. E. M. Brockbank, of Manchester, previously published, under this title, the notes of a female patient in whom jaundice had been present uninterruptedly for about fourteen months. It was thought at the time that the diagnosis of the case was straightforward, the symptoms of which the patient com-

plained—namely, periodical pains in the region of the gall-bladder, accompanied by slight rigors, vomiting, and obstructive jaundice—being almost pathognomonic of biliary obstruction. The absence of any swelling of the gall-bladder had been further looked upon as a strong indication that the cause of the biliary obstruction was the impaction of a gall-stone in the common bile-duct, probably at its duodenal end.

The further history of the case is now published. The patient had left the hospital on September 17, 1896. On October 10th Brockbank saw her and made this note: "Jaundice as deep as when seen in hospital. No further attacks of pain. She can manage to do her work in the house and to walk about outside, but does not feel very well."

Nothing further was seen of the woman until April 7, 1897, when she appeared again at the infirmary, and was readmitted. The account given by the patient of herself was that she had kept fairly well until the beginning of March, when she was taken ill with vomiting and severe pain in the chest with cough and great difficulty in expectorating. She was not confined to bed, but could get about the house. The jaundice was more intense than ever. As she became gradually worse, she applied for admission to the Royal Infirmary on April 7th, and she was then found to be suffering from acute pulmonary tuberculosis. Tubercle bacilli were found in the bile-stained sputum within a day or so of admission. Beyond the jaundice and the associated urinary and fæcal symptoms there were no indications of any biliary trouble. The temperature was irregular, almost always above normal, and between 100° and 103.6° F. until she died.

The fingers were decidedly clubbed, but no such condition was present on previous occasions. A slight systolic mitral regurgitant bruit was also heard; this, also, was a new feature in the case. The woman sank gradually and died on May 6th.

A post-mortem examination was made next day by Dr. Kelynack. The lungs were both the seat of extensive tuberculous ulceration of recent and acute origin, with cavitation in their upper lobes and congestion, and here and there small tuberculous foci in the upper lobes. The heart was small, soft, and flabby, but its valve-orifices and its cavities were practically normal. The liver was somewhat enlarged and bile-stained; its surface smooth and not cirrhotic. The intrahepatic ducts were not markedly dilated.

The gall-bladder was found to be small, contracted, and hidden beneath the edge of the liver. Internally there was some cicatricial puckering of its walls, and near the neck a pouch-like dilatation was seen. The cystic duct was narrowed, apparently by cicatricial tissue in its walls. The hepatic ducts were dilated, as was also the common bile-duct. At the duodenal end of this structure was a small pouch into which the tip of a finger could be readily inserted. In this dilatation was firmly fixed an oval, pebble-like gall-stone, about the size of a sparrow's egg. The proximal side of the concretion was roughened and warty from recent deposits of biliary matter. The calculus was evidently of a mixed variety, containing, probably, cholesterin, bilirubin-calcium, and pigments. A probe could be easily passed from the pouch through the papilla vateri into the duodenum. There was

no evidence of any erosion or ulceration of the tissues in contact with the concretion.

The pancreas was unusually large, and, especially toward the head, of a firm consistency, probably due to the development of a chronic interstitial pancreatitis from the constant irritation of the calculus in such close proximity. The spleen weighed 21½ ounces. It was much enlarged, soft, and pulpy, but showed no signs of tuberculosis. The left kidney contained a few small masses of secondary tuberculous deposit.

The tuberculosis which developed so acutely and ran such a rapid course was probably encouraged by the alcoholic habits of the patient, which were most likely much more extensive than she ever acknowledged. At any rate, the biliary condition would not be sufficient to predispose the woman to such a rapidly fatal attack of tubercle.

The whole duration of the jaundice in this case was about twenty months, which is a long time when the case is considered on its own merits, but comparatively short when looked at along with those patients mentioned in the previous paper in whom jaundice lasted six years.

There is one other point of interest which may be referred to, and that is in relation to the exciting cause of the formation of the solitary gall-stone found in the patient. From the appearance of the calculus (with no evidence of facets to be seen on it) it is probable that no other one was formed in the patient's biliary system at the same time. Except for the deposit of biliary pigment at the free, or proximal, end of the calculus there were no signs of recent growth; in fact, the surface of the stone was rather smooth and compact, as if it had been subjected to a great deal of mild friction. All things considered, it seemed as if the gall-stone had been formed at some previous period of the patient's life, and by some acute and transient process, which consisted, probably, of an inflammation of the mucous membrane of the gall-bladder. Such an acute formation of gall-stones does occur at times in certain people, and is of a different character to the chronic process which so frequently excites in old subjects the development of biliary calculi. In the present instance we have a cause for such a temporary cholecystitis in the typhoid fever from which the patient suffered about the year 1888, and the author thinks the case can fairly be looked upon as an instance of the former fever exciting the development of cholelithiasis in a patient previously free from such a disease. —Medical Chronicle, September, 1897.

Saline Transfusion in Shock.—Dr. Thomas Leidy Rhoads writes that during his term of service as hospital interne at Jefferson College Hospital there were two particularly alarming cases of shock following operations in which considerable blood was lost where instant action was demanded to revive the patients. Both cases were amputations at the upper third of the thigh,—one in the service of Professor Brinton and the other in the service of Professor Hearn; in each case the condition was exceedingly grave, and the patients were undoubtedly saved through the timely employment of saline transfusion.

When should hypodermoclysis be performed and when saline

transfusion? When the case is not so urgent, and when one can act with deliberation, perform hypodermoclysis. When the symptoms are alarming and life is about to ebb, and when seconds must be regarded as minutes, perform saline transfusion.

The simplest method for performing hypodermoclysis is to fill an ordinary rubber fountain-syringe that has been thoroughly cleansed with normal salt solution ((0.60 per cent.) made by adding a drachm of table-salt to one pint of boiled water. The water must be sterilized by boiling, and at a temperature of 101° F. when poured into the syringe; it will lose a degree in passing through the tube. At the end of the tube is attached a small-sized aspirating needle, also sterilized by boiling, which is plunged beneath the skin into the subcutaneous cellular tissue of the pectoral region, flanks, thighs, or between the scapulæ. The syringe is raised a distance of half a metre above the surface of the body, and the solution must be running through the aspirating needle while the needle is being inserted, so as to prevent the unnecessary introduction of air beneath the skin. About half a pint is allowed to flow in one place, when the needle is withdrawn and inserted at another site, until several pints have passed into the cellular tissue, which will require a half-hour or more to accomplish. The swellings produced by this procedure are rubbed and kneaded until absorption has taken place, which requires about twenty minutes. The point of the needle-puncture is sealed with iodoform collodion to prevent infection.

A convenient apparatus for intravenous saline transfusion consists of a cannula, rubber tubing half a metre long, and a funnel. The median basilic vein is exposed, and two catgut ligatures half an inch apart are placed under it. The distal ligature is tied and the vein nicked between the ligatures. The cannula is now inserted into the opening in the vein, and is held in position by tying the proximal ligature. The cannula is filled with saline solution and is then connected with the tube and funnel, which are also filled with the solution at once to displace the air. The funnel is raised above the part and the saline solution enters the vein. The funnel should be kept well filled by adding more solution as the fluid continues to run into the vein, so as to prevent air-emboli from entering the circulation.

The amount to inject depends upon the effects on the patient's pulse, which are noticeable after several ounces of the solution enters the circulation,—usually from half a pint to a pint will suffice. In emergency an ordinary glass syringe will answer the purpose of the funnel and cannula. Keen uses the apparatus of Collin, which renders the entrance of air impossible.

These methods of introducing saline solution into the circulation have undoubtedly helped to reduce the mortality of major operations in recent years.

While these measures are being carried out, we dare not neglect the therapeutics of shock in a different manner. In the selection of the proper drugs to administer we are met with the contentions of a number of observers, but in the writer's experience no drugs have acted as well as ammonia, alcohol, and atropine, mentioned in the order of their administration. They are given in very small doses, and at short intervals, until the pulse improves, the skin assumes its

accustomed glow, the temperature rises, and the brain becomes more active.

As shock finds its expression in a vasomotor paralysis, the therapeutic indications are to counteract the effects of this condition.

The patient is apathetic and often nauseated after the anæsthetic, and is unable to engage in the effort of swallowing solutions which would make the stomach more rebellious; so the administration of medicines by the mouth is out of the question. As the immediate effect of the drugs is desired, the medicines are most advantageously given by subcutaneous injection. If the case be extremely serious and prompt intervention is demanded, the drugs should be injected directly into a vein, preferably at the bend of the elbow, as the veins in this region are large and superficial and easy of access. The median basilic is usually selected for this purpose. The ammonia and alcohol are preferably administered together, as each of them being a diffusible drug and having its own special action on the circulation, one reinforces the other and hastens the effects on the system. The combination exists in the spiritus ammoniæ aromaticus, which is administered hypodermically in ½-drachm doses every fifteen minutes until its effects are noticeable. The ammonia will act quickly and cause a rise in the arterial pressure, due to its action upon the peripheral vasomotor nerve-fibres, and upon the muscular fibres in the coats of the arteries. The alcohol will be a direct stimulant to the rate as well as to the force of the heart's beat; so that there will be a direct action on the circulatory tract where it is failing. As the effects of both the ammonia and alcohol are fugacious, and their virtue lies almost solely in the rapidity of their action, it will be necessary to reinforce them with hypodermics or a more decided and more permanent vasomotor stimulant,—namely, atropine sulphate, which is also given hypodermically from the start in doses never greater than 1-100 grain, and repeated at half-hour intervals until the patient has reacted from shock. Large doses at more frequent intervals have a tendency to invite a subsequent depression. The atropine produces a rise of arterial pressure by stimulating the vasomotor centre, and is the most powerful vasomotor stimulant at our command, as proved by the experiments of Hare, and corroborated by clinical experience.

The vaunted administration of digitalis, calabar extract, nitroglycerin, and possibly strychnine, from which much was expected in the treatment of shock, have all proved fallacious.

The author sums up the treatment of shock following operation as follows:—

1. Prophylaxis before and during the operation.
2. Wrap the patient in a warm blanket and apply hot-water bottles or hot bricks and a hot-air apparatus.
3. Lower the head and shoulders.
4. Apply sinapisms to the precordium.
5. If severe shock, perform hypodermoclysis; if alarming, perform saline transfusion.
6. Give an enema of six ounces of strong, hot coffee.
7. Massage the abdomen and apply an abdominal compress.
8. Elevate the limbs, surround them with cotton-wool, and bandage.

9. Administer hypodermic injections of liquor ammoniæ aromaticus in ½-drachm doses every fifteen minutes, and atropine sulphate, 1-100 grain, every half-hour, until reaction sets in.—Therapeutic Gazette, October 15, 1897.

Gonorrhœa in Married Women.—G. G. Van Schaick considers that the conclusions of Noeggerath as to the importance of gonorrhœal infection have been fully confirmed. Three years ago he began the investigation of cases of married women suffering from vaginal discharge. In each instance cover-glass slips were made and stained with methylene-blue. Whenever gonococci were not found, subsequent examinations were made, at least three times, whenever it was possible, and in several patients it was only at the second or third examination that the gonococci were discovered.

The writer examined in this manner, during a space of very nearly three years, sixty-five women. Of these, four were examined again at an interval of at least a year, and two were examined again after an interval of two years and over. He thinks the result of his examinations does not represent an absolutely true statement of the condition of things. Cases of gonorrhœal infection must certainly have escaped notice. Most women take copious douches before coming to the office, and thus wash out the parts more or less completely, and in many cases gonococci are imbedded in the tissues, and for this and other reasons escape detection. Yet such evidence as he can present is positive.

All of the women seen complained of leucorrhœa, and in three only was there any evidence of an acute gonorrhœal infection from the appearance of the vulva, such as to lead to an instant diagnosis of gonorrhœa. In others the character of the discharge and the appearance of the parts simply led to suspicion, which was generally confirmed with the microscope. In four instances the patients declared that they were aware that their husbands had "something the matter" with them.

Among the sixty-five women examined he found gonococci seventeen times, or in 26 per cent. of the cases. Nineteen women were examined twice, and in three gonococci were found at the second examination. Thirty-two were examined three times, and in three of these the third examination revealed the cocci.

These results tend to show that gonorrhœa is a more common disease among married women than is generally believed. They prove the utter futility of mere inspection in making the diagnosis of the disease, and the uselessness, so far as gonorrhœa is concerned, of the inspections made in countries where the social evil is partially regulated by medical control. This, however, is now everywhere fully recognized, and the necessity for microscopical examinations has been urged repeatedly.—New York Medical Journal, October 30, 1897.

The Treatment of Gonorrhœa in Women.—C. F. Marshall, of Paddington, England, points out the incompleteness of vaginal douches as a form of treatment for purulent vaginitis, and states that the treatment is much more likely to be followed by complications of the disease than is the case when more radical and rational means are employed. He also compares the clinical study of purulent vagi-

nitis of venereal origin (gonorrhœa) with the recent observations of German surgeons obtained by bacteriological investigation.

The author states that it is almost impossible by vaginal douching to treat the whole of the vaginal surface; first, because the fluid seldom reaches the *cul-de-sacs* surrounding the cervix, and so leaves the upper end of the vagina untouched; secondly, the vaginal rugæ are not distended, and so the furrows between the rugæ are not properly reached by the fluid. What is required is a form of treatment which will obviate these difficulties, and start by treating the upper portion of the vagina, and also, as far as possible, distend the rugæ. This may be done by three methods: (1) application of lotions, such as silver nitrate, through a speculum to the whole of the vaginal surface; (2) plugging the vagina with wool tampons, soaked in medicated fluids; (3) medicated pessaries, the best of which are the gelatin-glycerin.

The Use of Silver Nitrate.—As regards treatment proper, he found it practically impossible in a case of acute vaginitis to apply it without an anæsthetic; the irritation produced is often as bad as the vaginitis itself. Either of the following methods is, therefore, much to be preferred.

The Wool-Tampon Method.—This consists in passing through a Ferguson speculum plugs of wool soaked in a glycerin solution of the required drug or a glycerin emulsion. A useful addition to this consists in lubricating the speculum with a vaselin preparation of the same drug, whereby the rugæ of the vagina are distended by the speculum and at the same time lubricated by the drug. Two or three fair-sized plugs are usually sufficient. This treatment should be repeated daily, the vagina being irrigated before each application.

The best drug to employ is a matter of opinion. Dr. Marshall has had good results with naphthol, in the proportion of 2 per cent. The naphthol is dissolved in a sufficient quantity of rectified spirit and mixed with the glycerin. This has the objection of being an irritating application, chiefly on account of the spirit. A less irritating fluid may be obtained by adding an equal quantity of water, which precipitates the naphthol as an emulsion. A glycerin solution of ichthyol (2 to 5 per cent.) is also good. Glycerin of borax may also be used, or glycerin of perchloride of mercury (1 to 500).

In many cases the inflammation is too acute to enable one to pass a speculum. In such cases it is best to use a vaginal douche for a few days till the vagina is less sensitive. (The douche he uses for this purpose contains a drachm each of sulphate of zinc, acetate of lead, and borax, to the pint, with an ounce of glycerin.)

The Treatment by Pessaries.—He has, for some time, given up the tampon method in favor of this, which is less painful and equally efficacious. Gelatin-glycerin is the best basis for the drug, being much superior to oleum theobromæ. In hospital practice he uses those made in one-inch test-tubes. When required for use the test-tube is placed in hot water till the pessary slides out, and is then passed up a speculum; by regulating the amount of melting various sizes can be produced. These pessaries gradually melt and lubricate the vagina with the drug used. For private practice these pessaries may be made in ovoid molds and kept ready for use.

As regards the drugs used, he has tried the following: Iodine, ½ per cent.; ichthyol, 2-5 per cent.; perchloride of mercury, 1 in 500; argonin, 5 per cent.; lysol, 2 per cent.; formalin, 2 per cent.; airol, 10 per cent.; naphthol, 2 per cent.; copaiba resin. The best results have been obtained by iodine and ichthyol. Argonin, airol, naphthol, and copaiba have the objection of being in suspension and not in solution. Lysol is fairly good, but formalin too irritating.

The pessary treatment is, he believes, by far the best for vaginitis; by this means, and also by the tampon method, the upper vagina is well treated, and hence the liability of endocervicitis and endometritis by extension of the inflammation is much diminished. He has seen many cases treated only by douching, where the cervix and upper vagina were still inflamed, although the lower part of the vagina was healthy. Endocervicitis is a frequent result of cases treated by douching, but so far as he has seen, much less common after either of the above methods.—Treatment, November 25, 1897.

Bunion.—Parker Syms, of New York, makes an incision about an inch in length on the dorsum of the toe. In a mild case, after retracting the tendon of the extensor proprius pollicis outward, he chisels off all the overprominent portion of the inner side of the head of the metatarsal bone, removing as much bone as is necessary to do away with all protuberance; he then sutures the wound and lets it heal under one dressing. Usually the patient can walk about after the first week.

In severe cases, where there is a marked adduction as well as lateral dislocation, Syms removes the head of the metatarsal with a chisel or bone-forceps, and also cuts off the prominent inner side of that bone. To resect the head of the metatarsal bone it will be necessary to divide the lateral ligaments and completely dislocate the toe. This can be done with ease and satisfaction through the simple straight incision described. It is necessary to remove so much bone that the toe will readily come into place and have no tendency to displacement. If this is not accomplished by the first ablation more bone must be removed.

The dressing must be carefully done and close attention given to the after-treatment, which should include the application of a plaster splint. The writer advises never to operate during an acute attack of inflammation; always to treat the deformity, and never operate on the bursa, for it will take care of itself after its cause is removed (the exceptions to this rule are the removal of callosities from the bursa when they exist, and the incision of bursæ when they suppurate); never to make the operation incision around or through the bursa.—New York Medical Journal, October 2, 1897.

Varieties of Aortic Regurgitation.—Handford, of Nottingham, gives the chief characteristics of the rheumatic cases of aortic regurgitation: (1) rheumatism comes on at a much earlier period of life than atheroma, and is the main cause of aortic regurgitation arising between the ages of 5 and 35 years; (2) the arteries are generally sound; (3) the heart-muscle is comparatively sound; and (4) apart from fresh attacks, the valvular disease soon ceases to be progressive. In all these respects rheumatic aortic regurgitation differs essentially

from the atheromatous, and the prognosis is very much more favorable. Not infrequently free regurgitation might exist for years with a complete absence of symptoms, even though the patient led an active life. The atheromatous cases are, by far, the most numerous and serious and present the following distinctions: (1) the disease is essentially a degeneration and arises in middle life, rarely before the age of 35, except when syphilis is the main cause; (2) the arteries are always involved to a considerable extent; (3) the heart-muscle is rarely sound; (4) the disease is almost always progressive; and (5) it affects the male much more frequently than the female. Of the atheromatous cases there are four chief subdivisions, according to the mode of production: (1) the syphilitic, arising generally between the ages of 30 and 50 years, affecting sometimes mainly the aorta and branches and sometimes mainly the valves, difficult to distinguish from fusiform aneurism, and rapidly progressive; (2) those arising from laborious work in strong, muscular men, generally between the ages of 40 and 50 years; (3) the arteriosclerotic, arising between the ages of 50 and 65 years in the gouty and in men who habitually ate and drank too much, especially when combined with hard mental work; and (4) cases arising from "old age,"—about 70 years. No general rule can be laid down for all cases as regarded the use of digitalis. It is most useful when there is consecutive mitral disease with dropsy, next in the rheumatic cases and those arising from laborious work; the latter can often be enabled to continue their work by daily doses of digitalis. The chief cause of failure of compensation is degeneration of the ventricle from fibroid change, the prognosis of which depends mainly upon the degree of occlusion of the coronary arteries. When the fibroid change is advanced digitalis has little tonic stimulating effect upon the heart, and not only fails to do good, but does positive harm, because it still causes tonic contraction of the small arteries and increases the work of the failing heart. Digitalis is of great use in failure of compensation from temporary causes. It generally does harm in the syphilitic, the arteriosclerotic, and the aged cases.—London Lancet, p. 741, 1897.

Formol-albumin.—Benedicenti (Arch. Ital. de Biol., tome xxvii, fasc. iii, 1897) states that while formalin in solution is not a more active bactericide than perchloride of mercury and other common disinfectants, it may cause sloughing of the skin and tissues, which renders its use in surgery very dangerous. Schleich tried to overcome this disadvantage by combining it with gelatin (Epitome, No. 423, vol. i, 1896). When broken up into small fragments it is then sold as "glutol," and is preferred by Schleich to iodoform and other disinfecting powders as being more soluble and less toxic. Glutol has never had the popularity it deserves in practical surgery, chiefly, perhaps, on account of its appearance. The author, finding that this glutol is a true chemical compound of formaldehyde with gelatin, has experimented with combinations of formaldehyde with other proteins. Of all these formol-albumin is to be preferred. This is prepared by placing a known weight of Merck's dried albumin in a solution of formaldehyde of known strength. The albumin then absorbs an amount of formaldehyde, depending, up to a certain point, on the length of time it is left in contact with it. If the albumin thus treated

is distilled in a current of steam, it breaks up again into formaldehyde and albumin, and it is thus possible to obtain formol-albumin containing any required percentage of formaldehyde. After removing the albumin from the formalin and estimating the percentage of formaldehyde it contains, it is dried and powdered. A white powder is thus obtained with disinfecting properties proportional to the amount of formaldehyde in it. With this experiments were made on rabbits. Wounds, either simple or inoculated with fæces, etc., healed excellently when powdered over with the formol-albumin, which kills also virulent cultures of B. anthracis, B. pyocyaneus, staphylococcus aureus, and streptococcus when mixed with or powdered over them. Benedicenti has also prepared formol-casein, which appears to act similarly to formol-albumin, and sero-formalin (from dried coagulated blood-serum). The latter, from experiments, seems to be a dangerous substance for wound treatment, since some wounded rabbits treated with it developed toxic symptoms. Formol-albumin, however, is non-toxic, and, as it need contain but very small quantities of formaldehyde to develop its antiseptic property, has no disagreeable smell. It is also much more readily absorbed by the tissues, and is much cheaper than iodoform.—British Medical Journal, November 27, 1897.

Pulmonary Tuberculosis and Child-bearing.—In a paper read before the Obstetrical Society of Boston, TOWNSEND reaches the following conclusions: 1. Conception may take place even in advanced pulmonary tuberculosis. 2. The disease is generally held in abeyance during pregnancy, although it may advance or even originate at this time. 3. Labor is short and easy in proportion to the severity of the disease. 4. During the puerperium a rapid advance, leading in some cases to speedy death, occurs; or the disease may originate at this time. In either case the temperature-chart suggests puerperal sepsis. 5. Premature labor is more common the more advanced the disease, although pregnancy often goes on to full term even in advanced cases. 6. The average weight of full-term children, as well as their general condition at birth, is not markedly below that of children of healthy mothers, except in the rare instances of congenital tuberculosis.—Boston Medical and Surgical Journal, October 14, 1897.

Camphor in Heart-failure.—C. C. WEST recommends the hypodermic administration of camphor, the following solution being employed:—

Camphor, 1 part.
Olive-oil, 10 parts.

Inject two syringefuls into each arm (about 5 cubic centimetres altogether).

A needle with a somewhat larger bore than that commonly employed is necessary. With the ordinary needle the injection is difficult, because of the thickness of the oil. In a case in which the patient had a number of times been absolutely pulseless and apparently lifeless, its use was followed by the most gratifying results. It is given throughout the illness, whenever the pulse fails, to supplement other cardiac stimulants.—Philadelphia Polyclinic, October 16, 1897.

New Books Received.

The editor acknowledges, with thanks, the receipt of the following books:—

"Twelfth and Thirteenth Annual Reports, Bureau of Animal Industry." 1895-'96. Department of Agriculture, Washington, D. C. ——"Tenth and Eleventh Annual Reports, Bureau of Animal Industry." 1893-'94. Department of Agriculture, Washington, D. C.—— "Eighth and Ninth Annual Reports, Bureau of Animal Industry." 1891-'92. Department of Agriculture, Washington, D. C.——"Sixth and Seventh Annual Reports, Bureau of Animal Industry." 1889-'90. Department of Agriculture, Washington, D. C.

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